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RELATIONSHIP BETWEEN BODY WEIGHT  
AND LEVELS OF SELF-ESTEEM IN  
OVERWEIGHT WOMEN

by

KRISTI HOLLINGSWORTH GOODSON

A Thesis  
Submitted in Partial Fulfillment of the Requirements  
for the Degree of Master of Science in Nursing  
in the Division of Nursing  
Mississippi University for Women

COLUMBUS, MISSISSIPPI

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Relationship Between Body Weight  
and Levels of Self-Esteem  
in Overweight Women

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## Abstract

Current research suggests that 36% of American women are considered overweight. Women who are overweight by definition are at risk for major health problems as well as altered levels of self-esteem. A correlational design was utilized to examine the following null hypothesis: There is no relationship between body weight and levels of self-esteem in overweight women. Nola Pender's Health Promotion Model was the theoretical framework used to guide this study. The sample consisted of 42 women who were overweight by definition. Levels of self-esteem were ascertained using the Rosenberg Self-Esteem Scale. To obtain demographic data, the Goodson Demographic Survey was utilized. Data were retrieved through multiple-choice and open-ended questionnaires that were handed out at two urban support groups for overweight individuals. Data were analyzed using descriptive statistics for demographic data and the Rosenberg Self-Esteem Scale. Pearson  $r$  correlations were used to answer the research hypothesis. Although no significant relationship emerged between body weight and levels of self-esteem, the researcher discovered additional findings that will impact future research. Women who reported early onset of excess body

weight had larger body mass indexes and lower self-esteem as compared to those who reported adult onset of excess body weight. Among the sample, 45.24% revealed chronic health problems. In relation to self-esteem, the researcher discovered those subjects with negative self-esteem had a larger body mass index than those subjects with positive self-esteem. Based on the findings from the study, several nursing practice recommendations were made. The nurse should perform routine assessments of levels of self-esteem among individuals and educate overweight individuals and families regarding the problems and issues that overweight individuals experience. Recommendations for future research include replication of the study using a more sensitive tool to assess self-esteem and investigation of perceptions of normal weight women concerning body image and self-esteem.

## Dedication

This thesis is dedicated in memory of my  
grandfather,

Frank S. Stewart

Without his love, support, and encouragement  
throughout my life, I would not have become the  
person I am today. He was my number one fan, and  
he is missed greatly. Our memories will be  
forever cherished.

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Lastly, I would like to thank my family and friends for all of their patience and support that have made this year a little more bearable. Special thanks to my mother, grandmother, and brother for always encouraging me to follow my dreams. Denise, thank you for sharing Jeremiah 29:11 which has served as a constant reminder that God is in control of my life and future.



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## Chapter I

### The Research Problem

Actual and imagined obesity and overweight are associated with a number of health problems that affect women in the United States. Women who are overweight by definition of body mass index (BMI) of more than 25 are at risk for major health problems. Current research suggests that 36% of American women are considered overweight (Centers of Disease Control, National Center for Health Statistics [CDC], 2001). With the overweight population growing, it is imperative to address problems associated with being overweight. Although more and more women are becoming overweight, society continues to view the ideal body size as thin. With society's current image of beauty being the tall and slender model-like woman, women who do not fit this image become the targets of weight prejudice. The overweight woman is at risk for physiological and psychological problems. One of the problems associated with being overweight is altered levels of self-esteem. Levels of self-esteem should be addressed in order to

identify the potential for problems, such as depression and anxiety, in an effort to provide adequate health care.

The purpose of this study was to examine the relationship between levels of self-esteem and body weight in overweight women. The ultimate goal of this study was to obtain information that will allow for a better understanding of some of the problems associated with being overweight.

### Establishment of the Problem

Obesity is a growing problem in today's society both medically and socially. A national survey was conducted in 1997 by the National Center of Health Statistics, Center for Disease Control and Prevention, which determined that 36% of adult women are considered overweight. The state of Mississippi has the highest rate for obesity in the Southeast. Perhaps one explanation of these findings are the eating behaviors of Mississippi women, which include consumption of high-fat foods that are easily accessed through fast-food establishments as well as through convenience foods (Vickers, 1993). Previous studies have also determined that some people may be genetically predisposed to the development of obesity (Vickers, 1993).

Overweight women are at greater risk for developing certain health problems, such as hypertension, diabetes,

hyperlipidemia, renal, and pulmonary problems, and have increased risk with anesthesia and surgical procedures (Vickers, 1993). A study conducted by St. Jeor (1993) concluded that being overweight was associated with more than 40% of all heart disease in U.S. women. In women with a weight gain of 20 lbs or more in adulthood, the risk for heart disease doubled (St. Jeor, 1993). The researcher further suggested that diabetes mellitus in overweight women occurred at three times the rate of women who were not overweight; other health concerns include orthopedic problems such as joint pain and low-back pain (St. Jeor, 1993). Mortality and morbidity rates increased with excess body weight for study participants.

As society continues to focus on thinness, the problem of obesity grows. Previous studies have indicated that African American women are less affected by society's focus on thinness than Caucasian women (Caldwell, Brownell, & Wilfley, 1996). Results from this research included the finding that although African American women tend to weigh more than Caucasian women, Caucasian women seem to have greater levels of body dissatisfaction.

The overweight population is at great risk for social stigmas and stereotyping. Findings from a study by Cornwell, Crocker, and Major (1993) concluded that, "the overweight may be the most frequently and severely

stigmatized group in this country" (p. 68). Previous research suggests that society and the media expect women to lose weight, maintain their figures, and become more attractive (Vickers, 1993). Because women of higher socioeconomic groups have an increased pressure to stay thin, the socioeconomic status versus ethnicity issue may be partly dealt with when comparing African American women and Caucasian women in the upper classes (Caldwell et al., 1996).

Overweight individuals are often viewed as lazy and unattractive. Such views and attitudes may subject overweight women to low levels of self-esteem. Low self-esteem may be related to other negative attitudes as well as altered self-concept. Altered levels of self-esteem have been linked to many psychological problems, such as depression and body image dissatisfaction. In a study that compared gender differences in relation to body weight, women experienced the effects of their weight more profoundly than men in relation to self-esteem (Cornwell et al., 1993). Therefore, research concerning self-esteem in overweight women is important to provide adequate health care.

### Significance to Nursing

With the overweight population increasing, the problems associated with being overweight are increasing. To improve quality of life for overweight women, the nursing profession must be knowledgeable about overweight problems and the potential health problems and risks associated with being overweight. By assessing the correlation between self-esteem and body weight, useful information will emerge that will add to the nursing knowledge base. This information can be incorporated into the curriculum of the graduate and undergraduate programs in order to better educate future nurses and advanced practice nurses about the problems related to being overweight.

Primary care providers can greatly impact the problems related to being overweight through primary prevention education as well as educating clients about health-promoting behaviors. Nurse practitioners are in an excellent position to provide this necessary education in order to promote optimal health and well-being of their clients and the community. Assessing levels of self-esteem is vital in understanding behaviors that may serve as barriers to health-promoting lifestyles. The findings of this study may be utilized by health care professionals to



provide better information regarding health promotion and prevention.

### Theoretical Framework

Pender's Health Promotion Model was the theoretical framework used to guide this research study. Pender (1996) stated that, "the Health Promotion Model is an attempt to depict the multidimensional nature of persons interacting within their environments as they pursue health" (p. 53). The Health Promotion Model is based on Bandura's Social Learning Theory as well as Fishbein's Theory of Reasoned Action (Tomey & Alligood, 1998). Weight control is basic to disease prevention and health promotion. Primary care providers must endorse prevention and teach their clients and families the importance of prevention. By understanding how clients can be motivated to maintain health, primary care providers can better develop plans of care that are beneficial to consumers.

The Health Promotion Model identifies cognitive perceptual factors of an individual that are influenced by personal, situational, and interpersonal characteristics which cause the individual to participate in behaviors that are health promoting. In 1996 the model was revised and three new variables were added. These variable areas include commitment to a plan of action, immediate

competing demands and preferences, and activity related affect. These variables encourage the individual to participate in health-promoting behaviors. Tomey and Alligood (1998) define the Health Promotion Model as "serving the function of identifying concepts that are relevant to health-promoting behaviors and integrating research findings in such a way to facilitate the generation of testable hypotheses" (p. 531). The Health Promotion Model represents the relationship between modifying factors that influence the occurrence of health-promoting behaviors and cognitive perceptual factors. Pender's Health Promotion Model involves two phases, the decision-making phase and the action phase.

Pender (1996) defined seven cognitive-perceptual factors that are also considered primary motivational mechanisms relevant to health promotion and have direct influence on behavior. Pender believes that one's health and health-promoting behaviors are influenced by each of these seven factors. The factors pertinent to this research were the perceived barriers to health-promoting behavior and perceived self-efficacy. For women in this study, perceived self-efficacy and perceived barriers to health-promoting behavior differ perhaps due to the difference in the individual levels of self-esteem. Furthermore, altered levels of self-esteem may in turn

serve as a barrier to health-promoting behavior. Pender suggested that individuals who value health and perceive themselves as capable of impacting their own health status are more likely to exhibit health-promoting behaviors. In addition to the cognitive-perceptual factors, Pender listed five modifying factors that are considered indirect measures of behavior. These factors include (a) biological characteristics such as percentage of body fat and weight, (b) demographic data such as sex, age, and ethnicity, (c) situational factors, (d) behavioral factors, and (d) interpersonal influences (Polit & Hungler, 1999). When assessing health problems and risks associated with being overweight, the researcher used the above factors in data collection. The indirect measures of behavior are potential motivators or barriers to the health-promoting behavior of having a normal body weight.

The second phase of the Health Promotion Model is the action phase. Pender (1996) suggests that individuals are motivated to change their behaviors based on cues to action. Even though one may have the cognitive-perceptual and modifying factors to change this behavior, the factors alone may not be sufficient (Clark, 1996). Clark further suggested that in order for the individual to change his or her behavior, a certain event may be needed to encourage the change. Relative to the research being

conducted, a cue to action may have included an overweight individual learning of the health risks involved in being overweight and in turn seeking health-promoting behaviors such as weight reduction.

The concepts of health promotion and disease prevention are becoming the major focus of health care in today's society. Pender (1996) estimated that 54% of deaths that occur before the age of 65 years are related to unhealthy lifestyles, and the current health care system must undergo change or "the nation's health will continue to deteriorate" (p. 5). The goal of this study was to determine the relationship between levels of self-esteem and body weight in overweight women in hopes of providing useful information critical to health promotion and disease prevention among overweight women. Through demographic data, this study also sought to determine factors that contribute to weight problems. The results of this study may be utilized by primary care providers in an effort to incorporate health promotion and disease prevention in the treatment of weight problems and the factors associated with being overweight.

### Assumptions

For this proposed study, the following assumptions were made:

1. Women have perceptions of self-esteem.
2. Levels of self-esteem can be empirically measured.
3. Health-promoting behaviors can influence body weight.

### Statement of the Problem

With the overweight population growing, it is imperative to address problems associated with being overweight. The overweight woman is at risk for both physiological and psychological problems. Altered levels of self-esteem have been linked to numerous psychological conditions, such as a negative self-concept, depression, and anxiety. However, previous researchers have suggested that more studies should be conducted relative to self-esteem and its relationship to excess weight.

### Null Hypothesis

The following null hypothesis guided this study:  
There is no relationship between body weight and levels of self-esteem in overweight women.

### Definition of Terms

For the purpose of the study, the following terms were defined:

Body weight: Theoretically, body weight is a measurement of an entire person usually expressed in

pounds or kilograms. Operationally, body weight was a measurement of a person in pounds and was self-reported.

Self-esteem: Theoretically, self-esteem is the degree of regard or respect that individuals have for themselves and is a measure of worth that they place on their abilities and judgments (Warren, 1991). Operationally, self-esteem was the degree of regard or respect that individuals have for themselves and is a measure of worth that they place on their abilities and judgments as measured by the Rosenberg Self-Esteem Scale.

Overweight: Theoretically, overweight is defined as having BMI of 25 to 29.9 (Uphold & Graham, 1998). Operationally, overweight was defined in this study as a person with a BMI of  $> 25$  calculated by self-reported height and weight.

Women: Theoretically, women are defined as adults of the female gender. Operationally, women were defined as adult females over the age of 18 years who were involved in a support group for overweight women.

### Summary

Overweight women are at risk for both psychological and physical problems. With society's negative views and attitudes toward the overweight population, altered levels of self-esteem arise. In order to improve the health of

overweight individuals, it is essential to identify and address the relationships between self-esteem and body weight. Nurse practitioners must educate overweight clients as well as other health care professionals about the problems and risks associated with low self-esteem in order to promote and improve the health of overweight individuals. Pender's Health Promotion Model incorporates cognitive-perceptual factors that are considered primary motivational mechanisms, are relevant to health promotion, and have direct influence on behavior. In this chapter, the establishment of the problem, theoretical framework, significance to nursing, assumptions, and definition of terms were presented.

## Chapter II

### Review of Literature

Overweight women are at risk for physiological problems associated with excess weight. The relationship between the two has been established many times by researchers. However, the relationship between excess body weight and psychological health has not been researched in-depth. A review of literature on this topic indicated that a relationship exists but varies among all people and may depend on the severity of the weight problem. Previous researchers have also suggested that research strategies need to be shifted to examine the risk factors that are present in the overweight population.

Literature exists with regard to excess body weight and self-esteem. However, researchers strongly recommend the need for further research. With the overweight population increasing in size, more research is needed to better understand the problems associated with being overweight. The following review of literature is germane to the researcher's study in many ways.



Caldwell, Brownell, and Wilfley (1996) purposed to determine if a relationship exists between weight, body dissatisfaction, and self-esteem in African American and Caucasian female dieters in the middle to high socioeconomic groups. The research question was as follows: What is the relationship between weight, body dissatisfaction, and self-esteem among African American and Caucasian women who are dieting? The study participants were chosen from subscribers of Consumer Reports magazine. Of the subscribers, 94,712 completed the initial survey in detail that evaluated commercial diet programs. The subjects reported dieting at least one time within the previous 3 years. The respondents were then asked if they were willing to complete a more detailed survey on body image and weight issues. Of the original group, 21,920 completed the second survey. The final sample consisted of 7,383 women, 7,200 were Caucasian and 183 were African American. The subjects had a mean age of 43 years with a range from 21 to 65 years. The women were free of illness and were not pregnant. The women also reported that they had no history of bulimia or anorexia.

Caldwell et al. (1996) calculated body mass indices of the subjects based on their reports of height and weight. Obese individuals were defined as having a body mass index (BMI) of  $> 30$ . Global self-esteem was assessed

using the Rosenberg Self-Esteem Scale (RSES). Silhouettes and a variety of questionnaires that had previously been used were used to assess attitudes about weight and shape. A body dissatisfaction factor consisting of six items was created by using factor analyses on a number of items. Caldwell et al. determined that Caucasian women lived in households with statistically higher incomes than the African American women ( $p = .001$ ). Both groups fell into the \$50,000-\$59,000 per year category. Fewer African American women reported being married ( $p = .000$ ). The mean age of the sample was 43 years, and there were no statistically significant differences among levels of education and occupation. Caldwell et al. (1996) found that African American females fell into a higher BMI category than did Caucasian females ( $p = .000$ ). The researchers controlled for marital status and household incomes and ANCOVAS were performed. African American females had significantly higher BMI scores ( $p = .001$ ) and weighed more than the Caucasian females ( $p = .0001$ ). The researchers controlled for marital status and income and found no statistical differences between African American and Caucasian females in relationship to current size and shape.

While controlling for BMI, effects of income, and marital status, differences between self-esteem and body

dissatisfaction were assessed and no significance emerged. Hierarchical multiple regressions were done with each group in order to explore the relationship between the variances of self-esteem for the two groups. Body dissatisfaction was responsible for 21% of the variance of self-esteem for Caucasian females and 24% of the variance in African American females. The researchers accounted for age, marital status, and income and found that BMI was responsible for 21% of the variance for Caucasian females and 11% of the variance for African American females. To test the significance of this finding, an interaction term for ethnicity times BMI was used. Individual analyses were done which indicated that the amount of variance in body dissatisfaction accounted for by shape and size was 24% for Caucasian females and 18% for African American females and was not significantly different.

Prior reports suggested that Caucasian females have lower levels of body dissatisfaction than do African American females. However, Caldwell et al.'s (1996) findings failed to support other reports. After the researchers controlled for marital status, BMI, and income, African American females and Caucasian females had equal degrees of body dissatisfaction. Caldwell et al. determined that differences in ethnicity do not exist in their study. The researchers suggested that previous

studies complicated socioeconomic status and race and, therefore, could be considered a source of bias. Caldwell et al. also concluded that the sample did not contain enough subjects in the lower classes to provide a meaningful analysis. The researchers recommended more studies that place emphasis on examining people across all socioeconomic levels. The study conducted by Caldwell et al. was similar to that of the current research in that both studies examined self-esteem using the Rosenberg Self-Esteem Scale. As suggested by Caldwell et al., the current researcher attempted to examine self-esteem among various socioeconomic groups.

Grilo, Brownell, Rodin, and Wilfley (1994) sought to examine body image, teasing history, and self-esteem among obese women using the Physical Appearance Related Testing Scale (PARTS). Reports of teasing history related to size, weight, and general appearance were examined. The researchers focused on the relationships between self-esteem, teasing, and attitudes of body image. Attitudes of body image included behavior, affect, and cognition appertaining to one's appearance. The researchers also examined whether persons who developed obesity at an early age differed from persons with adult onset obesity.

Three questions guided the study:

1. Do body shapes, concerns, and level of self-esteem vary across obese persons?

2. What is the relationship between being teased about weight and body dissatisfaction and self-esteem?

3. Do persons with early onset obesity or adult onset obesity differ with respect to teasing history, self-esteem, and body image?

Obesity in this study was defined as being 20% above the ideal body weight for height according to the 1983 Metropolitan Life Insurance Company norms (Grilo et al., 1994). The participants in the study had to be a minimum of 20% over ideal body weight. Adult onset obesity was defined as onset of obesity at age 18 years or older.

The sample consisted of 40 females who were overweight and were involved in an outpatient treatment program at Yale Center for Eating and Weight Disorders. The subjects' ages ranged from 31 to 68 years with a mean age of 47 years. Their mean weight was 216.4 pounds with a range from 146 to 335 pounds, and their mean height was 65.1 inches. The majority (97.5%) were Caucasian and socioeconomic status was middle class. In classifying obesity, the sample had a mean excess weight of 60% greater than ideal body weight for height. These subjects also had a long dieting history.

The subjects signed consent forms and completed a self-report questionnaire. Their heights and weights were obtained by the researchers using a medical balance beam scale. Interviews were then conducted by experienced clinicians to obtain very specific information regarding age of onset of obesity, history, and course of the obesity. Cognitive affective aspects of body image were measured using three tools. The Body Shape Questionnaire (BSQ) was used to elicit the degree of body dissatisfaction. This questionnaire consists of 34 items that are self-reported attitudinal measures. The subjects were asked to rate questions on a scale from 1 (never) to 6 (always). The higher the score was, the greater the body dissatisfaction. The researchers also used two subscales of the Multidimensional Body Self Relations Questionnaire (MBSRQ). Feelings of liking, attractiveness, and overall satisfaction with one's appearance were measured using the appearance evaluation subscale. The importance of the cognitive attention paid to appearance and the behavioral investment in maintaining or improving appearance were measured using the appearance orientation subscale. Subjects who scored low on the two scales had a more negative evaluation. Teasing history was assessed using PARTS. This tool consists of 18 items that are self-reported and measure teasing as one ages related to

weight/size teasing (W/ST) and general appearance teasing (GAT). The subjects were asked to answer the items considering the time period "when you were growing up," the higher the score was, the greater the frequency of teasing experienced. Levels of self-esteem were assessed using the Rosenberg Self-Esteem Scale, a 10-item self-reported questionnaire.

Correlational analyses were done to determine relationships among the variables of body image, self-esteem, and teasing. In consideration of significance levels for two-tailed tests, Pearson product-moment correlation analyses were done. Grilo et al. (1994) listed two findings of correlational significance. The frequency of teasing in childhood and self-esteem or body image in adulthood were unrelated to the current degree of obesity. The researchers also found the patterns of correlation between body image, self-esteem, and teasing was consistent with the idea that body image is a complicated multidimensional design and is best evaluated with analogous measures. There was no significant relationship between the GAT subscale and the Appearance Evaluation Scale and the BSQ. The researchers found a significant relationship between W/ST subscale and the appearance evaluation subscale and the BSQ,  $r = -.33$ ,  $p < .05$ . These findings suggest that subjects who reported being teased

at a higher frequency while growing up had greater degrees of body dissatisfaction during adulthood and a more negative evaluation of their appearance. After singling out the effects of age, the W/ST stayed significantly related to the BSQ,  $r = .44$ ,  $p < .005$ . The W/ST and GAT were not significantly related to self-esteem. Self-esteem was significantly related to the BSQ and the Appearance Evaluation Scales. There was a positive relationship between self-esteem and appearance evaluation,  $r = .63$ ,  $p < .001$ . A negative relationship was found to exist between self-esteem and body dissatisfaction,  $r = -.50$ ,  $p < .01$ . After singling out the effects of age, the relationship between self-esteem and appearance evaluation and body dissatisfaction remained significantly related, partial  $r = .59$ ,  $p < .001$ , and partial  $r = -.46$ ,  $p < .004$ , respectively.

To further assess the importance of the onset of obesity, the sample was divided into two groups: adult onset obesity and early onset obesity. The two groups were compared using two-tailed tests. The subjects who had early onset obesity reported a greater frequency of being teased about their weight and size,  $t(38) = 9.18$ ,  $p < .001$ , and about general appearance,  $t(38) = 2.97$ ,  $p < .005$ , than those with adult onset obesity. There were no significant differences between the two groups on



appearance evaluation. The subjects with early onset obesity reported to have higher levels of body dissatisfaction than those with adult onset obesity,  $t(38) = 2.14$ ,  $p < .04$ . The researchers examined whether teasing was related to body dissatisfaction and self-esteem since the subjects with early onset obesity had reports of greater frequency of being teased while growing up. There was a significant correlation between the frequency of being teased about weight and size and body dissatisfaction,  $r = .74$ ,  $p < .01$ , and self-esteem,  $r = -.55$ ,  $p < .05$ . There was no relationship between BSQ and the RSES.

Grilo et al. (1994) concluded that in a clinical sample of women with obesity, the extent of body image concerns about an individual's size and weight is related to the frequency of being teased about weight and size during childhood. In this sample, the more frequently one was teased about their shape and weight, the more negative their appearance was noted. The sample also experienced greater degrees of body dissatisfaction in adulthood related to the teasing during childhood. Teasing history had no relationship with self-esteem. However, it was determined that body image and self-esteem levels vary among weight groups. In this study, women with early onset obesity experienced greater levels of body dissatisfaction

than women with adult onset obesity. Self-esteem was related to body dissatisfaction in women with early onset obesity.

The findings of this study are consistent with numerous other studies done on similar variables. The researchers concluded that being teased about a specific sensitive characteristic, such as weight and size, can contribute to higher levels of body dissatisfaction than being teased in general. The study design did not allow for revealing an association between being teased and self-esteem and body image. The researchers suggested that further studies are needed to determine the potential role of teasing experiences in development of body image and, in addition to self-report, should include secondary sources of information in regard to teasing. Further suggestions were to perform more research in order for people to attempt to understand the relationship between teasing and self-esteem. The research should be directed at examining teasing during various stages of development. Grilo et al. (1994) suggested that examining the relationship between body image and self-esteem in obese persons, health care professionals may be able to treat obesity and its problems more effectively.

The current researcher sought to further examine self-esteem and its relationship to body weight. The study

conducted by Grilo et al. (1994) and the current study were both correlational in design. However, the current research took place in an urban support group for overweight women as opposed to a clinical sample utilized in the Grilo et al. study.

The purpose of the study conducted by Foster, Sarwer, and Wadden (1998) was to assess the severity, specificity, and clinical significance of body image dissatisfaction among obese women. Three research questions guided the study:

1. What is the source of the obese person's dissatisfaction? Researchers have found that obese women could be disturbed by a certain part of their body or their entire body in general.

2. What is the degree of body dissatisfaction experienced by obese women?

3. Is body dissatisfaction associated with clinically significant dysphoria?

In this study, body dysmorphic disorder (BDD), as defined by the American Psychiatric Association in 1994, is a preoccupation with an imagined or slight defect in appearance, which causes clinically significant distress or impairment in social, occupational, or other important areas of functioning.

Foster et al. (1998) used a nonexperimental, comparative, between-subject design. The sample consisted of two groups of women. The first group consisted of 79 obese women who were seeking treatment for their obesity. These women were recruited by television and print advertisement. Once the women were recruited, they were assessed by one of the researchers. The participants in this group had a mean weight of  $96.56 \pm 12.74$  kg, with a mean BMI of 35.62. Their mean age was 45.14 years. Of the participants, 34% were African American, 65% were Caucasian, and 1% was Hispanic American. Almost half of the sample were married (49%), 19% were divorced, 3% were separated, 27% were single, and 3% were widowed. The second group of participants in this study was a nonobese control group of 43 women who were not seeking treatment. These women were recruited from the community and were paid \$10 for participating and completing the study. The women had a mean weight of 61.71 kg with a mean BMI of 23.78. Their mean age was 39.00 years. Of the sample, 47% were Caucasian, 14% were Asian American, 35% were African American, and 5% were Hispanic American. Among this sample, 26% were married, 5% were separated, 14% were divorced, 51% were single, and 2% were widowed. When the researchers compared the two groups, the obese sample was significantly older and had a significantly higher BMI.

The participants of this study, both the obese women and the nonobese women, completed three measures before any treatment was conducted for the obese women. The Body Dysmorphic Disorder Examination--Self Report (BDDE-SR) was used to assess the specific body part with which participants were dissatisfied. This tool also measures symptoms of body dysmorphic disorder, which in turn assesses the degree of body image dissatisfaction. The Beck Depression Inventory (BDI) was used to assess mood. The higher the scores on this measure is, the greater the dysphoria. Self-esteem was measured using the Rosenberg Self-Esteem Scale. The higher the scores on this tool were, the lower the self-esteem.

In the area of specificity of body dissatisfaction, 47% of the obese women identified their abdomen or waist as being the body parts most dissatisfied with,  $\chi^2(15) = 242.82$ ,  $p < .001$ . The women also reported that their thighs (9%), their whole body (10%), and their lower body (8%) were the areas of greatest dissatisfaction. In the nonobese control group, 42% of the women reported the most dissatisfaction with their abdomen or waist,  $\chi^2(13) = 85.60$ ,  $p < .001$ . This percentage did not significantly differ with that of the obese group. Both groups reported the greatest dissatisfaction with their abdomen or waist. In the area of severity of body image dissatisfaction, the

obese women scored higher (52.13 - 27.00) on the BDDE-SR than did the nonobese women (40.26 - 20.94),  $t(119) = 2.53$ ,  $p < .01$ , which suggests that the obese women did have greater degrees of body dissatisfaction than the nonobese women. Among the obese women, there were no differences in the BDDE-SR in regard to marital status or race. The obese women reported moderate to extreme levels of dissatisfaction in their overall appearance (Foster et al., 1998).

The obese women reported being upset and thinking about their appearance more often than the nonobese women did (36% vs. 14%),  $\chi^2(1) = 6.61$ ,  $p < .01$ . More obese women reported being moderately to extremely embarrassed in social settings than did nonobese women (36% vs. 16%),  $\chi^2(1) = 5.39$ ,  $p < .02$ . The obese women reported hiding their appearances through clothes at a more frequent rate than did nonobese women (65% vs. 30%),  $\chi^2(1) = 13.75$ ,  $p < .001$ . In the area of clinical significance of body image dissatisfaction, the groups did not differ significantly with respect to the BDI and RSE. However, in the obese sample, decreased levels of self-esteem and increased levels of self-reported depressive symptoms were associated with increased levels of body dissatisfaction.

When assessing body dysmorphic disorder, 6 of the obese women reported degrees of body image dissatisfaction

consistent with the diagnosis of BDD. When these 6 women were compared to the other obese women, these 6 women reported more severe symptoms of depression (13.17 vs. 7.18),  $t(76) = 2.57$ ,  $p < .01$ , and lower self-esteem (23.50 vs. 17.08),  $t(76) = 3.43$ ,  $p < .001$ . One woman in the nonobese group met the diagnosis criteria for BDD.

In the study conducted by Foster et al. (1998), severity, specificity, and significance of body dissatisfaction among women who sought weight reduction were examined. These data found in their study indicated that obese women's appearance concerns are generally specific rather than global. The researchers also concluded that body dissatisfaction specific to the waistline might be independent of body weight in that 47% of obese women and 42% of nonobese women reported greater dissatisfaction with their waistline than their body in general. In contrast, only 8 of the women studied reported entire body dissatisfaction. Foster et al. (1998) also concluded that obese women have greater levels of body dissatisfaction than did nonobese women. No relationship was found to exist between BMI and body dissatisfaction, which suggests that the severity of body image dissatisfaction may be influenced by factors other than weight.

The researchers also found that obese women are often disturbed and preoccupied with body image concerns.

However, the preoccupation of these concerns does not seem to be associated with clinically significant disturbances.

Foster et al. (1998) suggest that further research is needed to explore the nature and extent of body dissatisfaction among obese women. Future research should be directed at appearance, since half of the women in this study reported trying to disguise their shape. The researchers also suggested that future research include obese women who do not seek treatment for weight reduction as their concerns with body image may differ. Research after weight reduction or therapy should also be done in order to provide health care providers with information regarding clinical significance of body image dissatisfaction. The current research was conducted in two urban support groups for overweight women who had sought treatment for their weight problem in an attempt to answer the recommendation to study subjects after weight reduction and treatment.

The Foster et al. (1998) study is germane to the author of the current research in that it provides information specific to levels of self-esteem in obese women. The participants studied in Foster et al. differed from the current study in that their study included a



group of obese women and a group of nonobese women. The current study included two groups of women who were involved in a support group for overweight women. The two studies were similar in that BMI was used to determine the degree of overweight or obesity. Both studies used the Rosenberg Self-Esteem Scale to assess self-esteem.

Foster, Wadden, and Vogt (1997) purposed to examine body images of obese women before, during, and after weight loss treatment. The researchers also purposed to determine if a relationship existed between weight loss and body image satisfaction. Foster et al. hypothesized that weight loss would significantly improve body images of the obese women and the significance of the improvement would depend on the amount of weight lost.

The participants of this study were women who were involved in a clinical trial to evaluate the effects of diet and exercise on obesity. The participants were treated in two groups, one at the University of Pennsylvania and one at Syracuse University. However, data were only collected among the 60 women involved in the Pennsylvania cohort. The participants in the Pennsylvania cohort had a mean age of 40.0 years with a standard deviation of 8.7 and a mean weight of 99 kg ( $SD = 12.3$ ). Their mean BMI was 36.3 kg/m ( $SD = 4.3$ ). This group consisted of 22 African Americans, 35 Caucasians, 1 Native

American, and 2 Hispanics. The participants were placed into one of four categories on a random basis: diet alone, diet plus strength training, diet plus aerobic training, or diet plus strength and aerobic training. The number of participants in each group was 14, 16, 15, and 15, respectively.

Prior to treatment the participants were asked to report the number of times they were previously on a diet and the amount of weight they lost on each diet. For 16 weeks the participants ate a 925-kilocalorie diet and drank liquid meal replacements. At week 22 the participants were changed to a 1,500 kcal diet in which they selected their own foods. During weeks 22 to 48, the participants had intakes that varied depending on their desired weight change. From weeks 1 to 28, all participants attended weekly meetings for group cognitive-behavioral programs. These meetings changed to biweekly from weeks 29 to 48. At weeks 15 and 16 the meetings were structured to promote the improvement of body image. The participants were counseled on cognitive therapy methods in order to identify the causes, beliefs, and results of negative body images.

To assess body image, Foster et al. (1997) administered two scales of the Multidimensional Body-Self Relations Questionnaire, Appearance Evaluation (AE) and

Body Areas Satisfaction (BAS). The Appearance Evaluation Scale was used to assess the overall body satisfaction and has an internal consistency of .88 and a test-retest reliability of .81. The BAS scale was used to assess satisfaction of specific body areas and has an internal consistency of .77 and a test-retest reliability of .86. For both scales, the higher the score is, the greater the satisfaction. Self-esteem was assessed using the Rosenberg Self-Esteem Scale (RSES). The researchers used the Beck Depression Inventory Scale to assess mood.

Foster et al. (1997) found no significant differences among the groups in regard to initial BMI, initial weight, or changes in weight at weeks 24 and 48. When measuring body image, the researcher found no significant differences before, during, or after weight loss treatment. When comparing the exercise groups with the diet alone group, no significant differences emerged. Therefore, the analysis focused on changes that occurred over time. The researchers used paired  $t$  tests to compare weeks 24 and week 28. The alpha level was adjusted to  $p = .008$  with six comparisons. Of the participants, body image data were collected on 59 women. Of the 59 participants, 5 stopped treatment by week 24, and 8 stopped between weeks 24 and 48. This resulted in an attrition rate of 22% (13 of 59). At weeks 24 and 48, body image data were not

collected from 6 participants. Data were available for 48 of the 54 participants in treatment at week 24 and for 40 of the 46 participants at week 48.

Before treatment, positive ratings on the BAS and the Appearance Evaluation Scale were strongly related to higher levels of self-esteem, lower levels of dysphoria, and fewer previous diets. However, neither of the scales were related to BMI. After a weight loss of 19.4 kg ( $\underline{SD} = 6.5$ ; range = 6.4 to -32.4), and after the first 24 weeks, the participants made significant improvements in BAS ( $\underline{M} = 0.8$ ,  $\underline{SD} = .06$ , range  $\pm 0.3 - 2.1$ ) and appearance evaluation ( $\underline{M} = 1.2$ ,  $\underline{SD} = 0.8$ , range = -0.6 - 3.1). During weeks 24 to 48, the participants had a weight gain of 3.5 kg ( $\underline{SD} = 4.4$ , range = -16.0 - 5.6) and reported decreases in BAS ( $\underline{M} = -0.2$ ,  $\underline{SD} = 0.4$ , range  $\pm 1.1 - 0.6$ ) and AE ( $\underline{M} = -0.3$ ,  $\underline{SD} = 0.6$ , range = -1.4 - 0.6). At the end of the 48 weeks, the participants had decreased their body weight by 16.3 kg ( $\underline{SD} = 7.1$ , range = -31.8 to -3.4) and reported strong improvements in BAS ( $\underline{M} = 0.6$ ,  $\underline{SD} = 0.5$ , range = > 9 to 1.7) and  $\underline{M} = 0.8$ ,  $\underline{SD} = 0.8$ , range = -0.9 to 2.9 from baseline. From week 24, changes in weight were not significantly related to changes in BAS and AE,  $\underline{r} = -.27$ ,  $\underline{p} = .06$  for BAS, and  $\underline{r} = -.25$ ,  $\underline{p} = .09$ , for AE. However, at week 24, initial changes in BAS and AE were the

strongest correlates of change in these measures,  $r = .59$ ,  $p < .001$  for AE, and  $r = .29$ ,  $p = .05$  for BAS.

Foster et al. (1997) conducted ANOVAS in which no significance emerged in changes in BAS or AE at week 24 among participants with a weight loss of 12.4 kg ( $SD = 2.7$ ), 19.5 kg ( $SD = 1.8$ ) and 26.8 kg ( $SD = 3.3$ ) by week 24, respectively. The relationship between body images and weight loss from beginning to week 48 was of low significance,  $r = -.33$ ,  $p = .04$  for BAS, and  $r = -.30$ ,  $p = .06$  for AE. At week 48, the strongest correlates of change in these measures were initial values of BAS and AE,  $r = .33$ ,  $p = .04$  for BAS; and  $r = .51$ ,  $p = .001$  for AE. An ANOVA performed did not reveal any significance in changes in BAS and AE among participants who had a weight loss of 9.0 kg ( $SD = 2.5$ ), 15.2 kg ( $SD = 1.6$ ), and 24.7 kg ( $SD = 3.9$ ), by week 48, respectively. To compare groups on the basis of weight change from weeks 24 to 48, the researchers performed an additional ANOVA. Foster et al. compared three groups: participants who lost weight, participants who gained 5 kg or less, and participants who gained more than 5 kg. No significance emerged in regard to BAS which showed changes of -2.1 kg ( $SD = 1.9$ ), 2.6 kg ( $SD = 1.3$ ), and 8.3 kg ( $SD = 3.3$ ) from week 24 to 48, respectively. However, differences existed in regard to AE among the groups, in that the group that gained more than

5 kg had greater dissatisfaction than the other groups. No significance emerged among the groups in changes in BAS or AE from beginning to week 48. Although the correlation between self-esteem and mood to body image was strong before treatment, the changes were not significant with relation to changes in BAS and AE at weeks 24 or 48.

Foster et al. (1997) listed several major findings of their study. They found consistent with their hypothesis that weight loss treatment was related to significant improvements in the participants' ratings of body satisfaction and appearance. However, the researchers were unable to determine if the changes in body image were related to weight loss or participation in cognitive-behavioral treatment or the combination of both. Foster et al. concluded that the improvements made in body image were not related to weight loss, in that those participants with a 12-kg weight loss at week 24 showed the same improvements as those with a 27-kg weight loss at the same time. The researchers attributed this to the possibility that the improvements in body image were related to the treatment instead of weight loss. The researchers suggested another possible reason was that only small amounts of weight loss are necessary for changes in body image. They concluded that earlier and more frequent examinations of body image would have

allowed them to determine if a weight loss threshold exists. Another significant finding was that even after weight regain, body image remained improved from baseline. However, the researchers were uncertain if the positive changes would have been reversed with greater amounts of weight gain.

Foster et al. (1997) offered that their sample of women did not represent the general population of all obese people and suggested the need for future studies to include larger more heterogeneous samples. The researchers suggested that weight loss in combination with cognitive-behavioral treatment would give obese people the improvement in body image that they desire.

Foster et al. suggested that body image may be improved by treatments that are focused on improving self-esteem and helping the obese persons to better cope with discrimination that they are likely to receive, thereby providing a foundation to the current study which examined self-esteem in overweight women. The study conducted by Foster et al. differed from the current research in that the participants of the study conducted by Foster et al. (1997) were involved in a clinical group at a large institution, whereas the participants in the current study were involved in an urban support group for overweight women.

Kolotkin, Head, Hamilton, and Tse (1995) developed the Impact of Weight Questionnaire (IWQOL). In their 1995 study, the researchers proposed to develop a tool that would measure the relationships between weight and quality of life that would be reliable and valid. Kolotkin et al. also aimed to the aspects of quality of life that are most affected by weight and to measure improvements in quality of life that are associated with weight loss or other treatment interventions. The researchers conducted two separate studies. The first study described item development, assessed reliability, and compared pre- and post-treatment scores on the IWQOL. The second study examined the effects of BMI, age, and gender on subjects' perceptions of impact of weight on quality of life.

The researchers used a comparative design. In the first study the subjects were a group of 64 outpatients who were involved in an obesity treatment program at Duke University Diet and Fitness Center (DDFC). The group consisted of 27 men and 37 women. The mean age was 45 and the mean BMI was 40.4 for the men and 34.6 for the women. This group of subjects was also included in the second study. For item development of the IWQOL, 20 patients were interviewed and asked to describe the effects of being overweight. The authors wrote items that reflected the concerns most commonly voiced, based on the responses of



the patients. The researchers then tested the items by obtaining feedback from other patients. The authors then divided the items into eight scales: health (14), work (7), social/interpersonal (11), self-esteem (10), mobility (10), comfort with food (9), activities of daily living (7), and sexual life (6). The patients who were used to develop the items were not used as subjects in the two studies.

The subjects completed the questionnaire at three different points in time. The questionnaires were completed on Days 1, 2, and 28 of treatment. The questionnaires completed on Day 1 were used as pre-treatment evaluations. The questionnaires administered on Day 2 were used to determine test-retest reliability. The effects of the treatment were determined by the scores of Day 28 questionnaires. Individual items were answered using the following scale: 1 = never true, 2 = rarely true, 3 = sometimes true, 4 = often true, and 5 = always true. For all except the comfort with food scale, the higher the score was, the poorer the quality of life for the area addressed.

Of the total subjects who answered the questionnaires on Day 1, 51 answered the questionnaire on Day 2. To measure test-retest reliability, Kolotkin et al. (1995) used Spearman correlation coefficients. The test-retest

reliabilities averaged .75. The scale test-retest reliabilities averaged .89. Internal consistency was measured using Cronbach's alpha and ranged from .68 to .93. Treatment effects were measured using paired  $t$  tests. To control for experiment-wise error, Kolotkin et al. used the Bonferroni procedure, which resulted in an overall alpha of .01 and an adjusted alpha of .001 for individual  $t$  tests. Of the 64 subjects, 37 completed the IWQOL on the last day of treatment. After treatment the subjects' scores decreased significantly which suggests improved quality of life. However, in the area of Comfort with food, the scores were also lower, which indicated less comfort with food after treatment.

In the second study by Kolotkin et al. (1995) examined relationships between impact of weight and BMI, age, and gender. Three hypotheses guided the study:

1. The impact of weight on quality of life would be greater for heavier than less heavy subjects.

2. Weight would have a greater impact on quality of life for women as compared to men.

3. With increasing age, weight would exert less impact on quality of life in the areas of self-esteem and social/interpersonal.

The sample consisted of 181 subjects who were involved in an outpatient treatment program for obesity at

DDFC. Of the 181, 64 were men and 117 were women. The mean age was 48.7 years and the mean BMI was 38.3. Of the sample, the majority were Caucasian, and the average age of obesity onset was 25. Kolotkin et al. (1995) surveyed the group for eating behavior and found 66% of the group reported eating snacks after dinner at least four times per week and 44% reported bingeing. The group also reported eating out at least nine times per week. Of the sample, 62% of the participants were married, 59% held a bachelor's degree, and 21% had post-graduate training. The researchers also examined psychological history and found that 77% of the group had at least one psychological concern. Forty-five percent of the sample reported using psychopharmacological interventions, psychotherapy, or both.

The researchers used a t test to compare men's and women's scores. To control for experiment error, Kolotkin et al. (1995) used the Bonferroni technique, which resulted in an adjusted alpha of .006 and an overall alpha of .05. Women in general scored higher on all scales than men. However, in the area of self-esteem, the scores differed significantly, indicating that self-esteem is a susceptible area for women no matter what they weigh. The researchers controlled for BMI on gender and found the women's scores on self-esteem and sexual life

significantly higher than men's scores (30.7/10.2 to 23.7/10.2). In order to assess the effects of BMI, the researchers divided the group into BMI tertiles and analyzed them by gender. Women differed significantly from men on sexual life and self-esteem in the first tertile (BMI > 32.7). In the middle tertile (BMI 32.7 to 39.8) women and men differed significantly only on self-esteem. In the third tertile (BMI > 39.8), no significant differences emerged. In each of the areas, women scored significantly higher than men.

The researchers concluded that weight has greater impact on women. The results also indicated that women experience distress about self-esteem and sexual life even with low BMIs. Kolotkin et al. concluded that as men increase in weight, their sexual lives and self-esteem are affected relatively the same as women. This finding is supported by no significant differences in the highest BMI tertile. To compare mean scale scores for men and women across three levels of BMI, the researchers used ANOVA. Bonferroni  $t$  tests were used for two-group comparison. For men, mean scores differed across all levels of BMI except for comfort with food and work. On scale comparisons between BMI-1 and BMI-2, no significant differences emerged. However, when comparing BMI-2 and BMI-3, four scales differed. Between BMI-1 and BMI-3, five scales

differed in comparison. The researchers concluded that the greater the BMI was, the greater the impact on quality of life. For women, ANOVA indicated mean scores differed across all levels of BMI for all scales except comfort with food, sexual life, and self-esteem. Kolotkin et al. concluded that women have a perceived negative impact of weight in relationship to self-esteem, sexual life, and comfort with food regardless of the amount of overweight. Women were similar to men in that the greater the BMI was, the greater the impact on quality of life.

To determine the effect of age on quality of life, the researchers used a multiple regression analysis. Both men and women reported that as age increased there was less impact of weight on the quality of life in the areas of social/interpersonal life and self-esteem. Both groups also reported that as age increased, the greater the impact of weight on mobility. The total sample reported greater impact on health related to weight. Age had no significant effect on activities of daily living, work, sexual life, or comfort with food.

Study 1 reported on areas of the Impact of Life Questionnaire. Kolotkin et al. (1995) concluded that improvements in areas of quality of life were associated with weight loss. The subjects in this study post-treatment reported significantly improved quality of life.

This finding prompted Kolotkin et al. to conclude some of the improvements could be treatment-induced. However, the exact percentage of improvement due to treatment could not be determined due to the fact that a control group was not examined. Based on the results of the comfort with food scale, the researchers suggested that obese patients were less comfortable with food after treatment.

Study 2 reported on the effects of gender, BMI, and age on individuals' perceptions of the impact of weight on the quality of life. Kolotkin et al. (1995) suggested their hypotheses held true regarding the relationships between age, gender, and BMI. As the researchers predicted, as a patient's size increased, the greater the impact of weight on the quality of life became. Quality of life for women worsened as BMI increased in the areas of social/interpersonal, mobility, health, and activities of daily life. For men, as weight increased, the greater impact of weight on quality of life became in all areas except for comfort with food and work. For women, the relationship between BMI and quality of life in regard to self-esteem and sexual life was very complex. Women reported that weight had a great impact on quality of life in these areas, even in the lowest BMI tertile. After controlling for BMI, Kolotkin et al. suggested that women

are more profoundly affected by weight than are men in the areas of sexual life and self-esteem.

Kolotkin et al. (1995) identified that clinical samples usually experience more problems than do community samples of the obese. The sample of this study also consisted of participants of the Caucasian race in the upper middle-class. Because of these factors, the results of this study cannot be generalized. The researchers suggested future research study patients after treatment in order to determine if the changes in quality of life continue in a positive direction. Kolotkin et al. plan to administer the IWQOL to obese people with a variety of eating disorders as well as across the weight spectrum. The researchers suggested that the IWQOL may be useful in identifying severe impairments in quality of life among overweight patients. They further concluded treatment of any type should have improved of quality of life as its main goal.

The Kolotkin et al. study and the current study both examined levels of self-esteem among overweight women. Additionally, both studies used BMI to assess the severity of overweight or obesity. The research by Kolotkin et al. was that of a comparative design, whereas the current research was that of a correlational design. The Kolotkin et al. study and the current study also differed in that

the Kolotkin et al. study examined men and women, whereas the current study examined women only.

Hill and Williams (1998) purposed to examine psychological well-being in a group of obese women. The researchers had three goals: (a) to evaluate the effect of the level of obesity and psychological health and self-perception, (b) to investigate binge eating in this group, and (c) to examine predictors of psychological distress. Hill and Williams hypothesized that the severely obese would show the greatest impairment in psychological health and that body weight would be an important predictor of degree of psychological distress. The study participants were chosen from 217 women who completed and returned a questionnaire that was included in a magazine for women of size 16 and over. The women with a BMI of  $> 30$  were included in the study. The final sample consisted of 179 women with a mean age of 45.1 years and a range of 18 to 75 years. Of the sample, 72% were married or had been married, 86% were currently employed, and 57% had one or more children. The women described their own socioeconomic status using their occupation. Seventy-two percent of the women were in high socioeconomic classes I and II, and 2% were in low socioeconomic classes IV and V. The researchers assumed that a few of the women were involved in a treatment program for obesity.



The magazine questionnaire was constructed as a detachable insert and included the following heading: "Self-Perception, Size and Weight. Research Questionnaire for the Clinical Psychology Department at the University of Leeds." Questions were arranged in eight sections including personal size and weight history, demographics, appearance, how your weight changes, well-being, eating, you at different times, and lifestyle. In addition to the questionnaire, Hill and Williams also used assessment devices. To assess body shape, drawings of male and female figures developed by Stunkard et al. were used. The drawings were ordered from extremely thin to obese. The participants were asked to choose a figure that best described the following: your shape now, your ideal shape, your husband/partner, your mother, your father (Hill & Williams, 1998). The differences between ideal shape and current shape were calculated and identified as "distance from ideal shape."

Body shape satisfaction was assessed using a variation of the Body Cathexis Scale. The participants were asked to rate their satisfaction with their appearance in relation to 15 body regions. These regions included face, neck, shoulders, upper arms, forearms, hands, breasts, waist, stomach, hips, bottom, thighs, calves, ankles, and feet. The participants were also asked

to rate satisfaction with appearance in relation to three body characteristics: weight, height, and body shape. The scale consisted of ratings ranging from 1 (extremely satisfied) to 7 (extremely dissatisfied). The ratings were averaged to determine an overall body appearance satisfaction. The higher the score was, the greater the dissatisfaction.

Dietary restraint was assessed using the Dutch Eating Behavior Questionnaire, a 10-item subscale. The researchers used additional questions to assess feelings about eating, binge eating, food cravings, and frequency of regular meal taking and snacking. Mental health was assessed using the Mental Health Inventory (MHI), a 5-item test to evaluate psychological health. The tool assessed anxiety, depression, general positive effect, and behavioral/emotional control. The responses are constructed using a scale to indicate the frequency of a feeling or symptom ranging from 1 (none of the time) to 6 (all of the time). The participants were also asked to rate their physical and mental health globally on a scale from 1 (extremely unhealthy) to 7 (extremely healthy).

Finally, self-esteem was assessed using the Rosenberg Self-Esteem Scale. Hill and Williams also used additional questions to address contentment with social life, feeling sexually attractive, and wearing fashionable clothes. Body

mass indices were calculated using self-reported height and weight. The participants were then placed into one of three groups: BMI 30 to 34.9, BMI 35 to 39.9, and BMI > 40. To evaluate the effects of obesity, the researchers used both MANOVA and ANOVA. The ANOVA was used to compare the three obesity groups. The MHI scores (predictors of psychological health) were examined by multiple regression analysis.

For the three groups, the mean BMI was 32.5 and 45.6. The women in the heavier groups were significantly shorter in height than the women in the other groups,  $F(2, 176) = 4.71$ , post hoc comparison ( $p < .05$ ). Hill and Williams found no significant differences between the groups in relation to ideal body weight which is a BMI of 25 to 27. However, significant differences existed between the groups when comparing their highest weight ever,  $F(2, 174) = 67.28$ ,  $p < .001$ . Among the group of heaviest women, frequent attempts to lose weight were more common, and they were three times more likely to report childhood obesity than the BMI 30 to 35 group,  $\chi^2(12) = 24.9$  and  $\chi^2(10) = 22.5$ , respectively, both  $p < .05$ . In regard to demographic data, no significance emerged.

MANOVA of the MHI, frequency of binge eating, and self-ratings of physical health determined a significant difference between the groups,  $F(8, 344) = 2.89$ ,  $p < .01$ .

However, with univariate analysis, binge eating ( $p < .001$ ) and rated physical health ( $p < .05$ ) had a group effect. In the area of self-perception, MANOVA revealed a highly significant difference between BMI groups,  $F(18, 320) = 2.60$ ,  $p < .001$ . Good social life was the only measure not significant on univariate analysis. The BMI  $> 40$  group experienced greater overall dissatisfaction with the shape, body weight, and appearance. This group also had the lowest self-esteem, felt they had fewer friends and were least attractive, and were furthest from their ideal body shape. Forty-seven of the participants (26%) were categorized as binge eaters and were then compared to the non-binge eaters. A highly significant difference emerged between the groups,  $F(9, 169) = 13.83$ ,  $p < .001$ . Although the groups did not differ in dietary restraint, the binge eaters reported consuming more regular meals and more snacks. Among the participants, the use of laxatives or vomiting as an attempt to control weight was rare. Five of the binge eaters reported vomiting "sometimes" to "very often," and five reported laxative use as frequently, in contrast with three of five, respectively, with the non-binge eaters. One woman from each group reported using laxatives and vomiting. Of the two groups, binge eaters had lower self-esteem, scored higher on MHI, and were significantly heavier (all  $p < .05$ ).

When using multiple regression analyses to examine predictors of scores on the MHI, Hill and Williams found the regression equation to be highly significant,  $F(8, 159) = 25.17$ ,  $p < .001$ . This finding accounted for 54% of the variability in MHI scores. Self-esteem and peer relationships were highly significant negative predictors of poor mental health. When self-esteem was removed from the analysis, the predictive power of the regression model was reduced to 37% of the variance. However, this also added age and body dissatisfaction as significant predictors (both  $p < .05$ ).

Hill and Williams (1998) hypothesized that the severely obese would show the greatest impairment in psychological health and that body weight would be a predictor of degree of psychological distress. However, their findings do not support this hypothesis. The heaviest women in this sample were found not to be in the poorest state of mental health. The researchers developed four conclusions based on their findings. First, Hill and Williams concluded that "asking which obese persons suffer most psychological distress yields rather different answers to the more traditional question of how they differ from nonobese individuals" (p. 582). Limiting the analysis to the obese revealed social influences, and cognitive factors are greater predictors of mental health

than the degree of overweight. From this conclusion, Hill and Williams suggested that self-esteem and social relationships possibly may act as mediators between mental health states and obesity.

Secondly, Hill and Williams concluded that these findings place emphasis on the damage associated with the social repercussions of obesity. The researchers also concluded that self-esteem is a socially derived state. Thirdly, Hill and Williams suggest that "the concept of psychological health or distress requires clarification" (p. 582). "Low self-esteem, social avoidance and body image dissatisfaction may need to be included alongside clinical states of depression and anxiety, as significant symptoms of psychological distress" (Hill & Williams, 1998, p. 582). Fourthly, the researchers concluded that their study confirms that obese women who are recruited outside a clinical setting have problems with controlling their eating.

Hill and Williams (1998) identified several weaknesses in the study. The sample did not represent the entire population, and the researchers relied on questionnaire responses. The researchers also suggested that with a low number of questionnaires returned, the sample may not even be representative of the magazine readers. Hill and Williams also suggested that further

research should include larger, more representative sample of the obese population and focus on social factors and the relationship to self-esteem and psychological health.

Conclusions reached in the study were of importance to the current research in that Hill and Williams emphasized the possibility of self-esteem acting as a mediator between mental health states and obesity. Additionally, it was found that low self-esteem may need to be included as a significant symptom of psychological distress. The Hill and Williams study and the current study both used the Rosenberg Self-Esteem Scale to examine levels of self-esteem among the participants. The participants of the Hill and Williams study were solicited through a magazine ad, whereas the participants of the current study were accessed through two support groups for overweight women.

A study related to obesity and mental health was conducted by Rosen and Myers in 1999. The purpose of the study was fourfold. First, the researchers purposed to identify a comprehensive list of common stigmatizing experiences faced by obese persons. Secondly, the researchers sought to demonstrate a relationship between stigmatizing experiences and mental health symptoms. Thirdly, they attempted to identify the common strategies that obese persons use to cope with stigma and to evaluate

the relation between their coping strategies and mental health adjustments. Fourth, Rosen and Myers purposed to explore the relationship between forms for coping with obesity stigmatization and psychological adjustment. The researchers attempted to meet these goals through two studies.

The first study purposed to create two inventories that included stigmatizing encounters as experienced by obese people and their coping mechanisms. The subjects were divided into clinical and nonclinical groups of obese groups, authors of the obese media, and professionals who have work experience with the obese persons. The clinical sample consisted of 63 severely obese patients, 21 males and 42 females, who were involved in a gastric bypass surgery program. This group included both patients who had undergone the surgery and some who were pre-op candidates. The entire group either had or previously had a BMI of > 40. The nonclinical sample included 6 males and 32 females who were members of an E-mail service named fat-acceptance@worldstd.com. The 38 subjects responded to the researchers' request for obese persons' experiences of stigmatization and discrimination. Both samples were asked to complete an open-ended questionnaire on stigmatizing situations and coping mechanisms.



The professional respondents were 7 members of the Association for the Advancement of Behavior Therapy, a special interest group, that addresses obesity and eating disorders. The researchers asked these professionals to describe how they recommended their clients to cope with stigmatizing situations through an open-ended questionnaire. Data were collected from 32 female authors of obesity print media. These magazines were *Journeys to Self-Acceptance: Fat Women Speak Out* and *Radiance: A Magazine for Large Women*.

The subjects in study 1 reported 185 stigmatizing experiences and 382 coping responses. Five graduate psychology students and one psychologist read the lists and each defined themes. The raters' reliability identified 11 stigma and 21 coping strategies. Three raters who were graduate students then sorted these situations and responses into categories. The raters developed final questionnaires: *Stigmatizing Situations* and *Coping Responses*, which included 50 and 99 items in which each category was represented by 1 to 11 items. The subjects were given a list of situations and asked to report if and how often the situations had happened to them. They were then given coping strategies and asked to rate how often they have used the strategies by using a scale. The scale used was 10-point anchor scale (0 =

never, 1 = once in your life, 2 = several times in your life, 3 = about once per year, 4 = several times per year, 5 = about once a month, 6 = several times per month, 7 = about once per week, 8 = Several times per week, and 9 = daily).

Study 2 purposed to examine the frequency of stigmatizing situations, coping mechanisms, and the relationship of these to adjustment psychologically. By comparing groups of subjects with varying levels of obesity, Rosen and Myers (1999) tested the validity of the stigma questionnaires. The researchers invited 394 people to participate in the study of 2,277 who were patients at two gastric bypass surgery clinics for severely obese persons. The remaining 117 were people who had participated in weight loss studies and were classified as mild to moderately obese. Both groups were clinical samples who were seeking some form of treatment for their obesity. Rosen and Myers distributed surveys in which 34 were returned by weight loss patients, and 112 were returned by surgical patients. The total response rate was 34%. The final sample consisted of 34 men and 112 women with a mean age of 42.13 years. Ninety-one percent of the sample were of the Caucasian race, 2.1% Native American, 3.4% African American, and 3.4% other. The mean pre-

treatment weight for the sample was 307.8 lbs, and the mean pre-treatment BMI was 49.55.

The participants were asked to complete the surveys and return them through the mail. The participants were given the option to include their names and addresses which were placed into a lottery for two cash prizes of \$50. The researchers kept the names and addresses separate from the data in order to provide confidentiality. The participants were asked to complete three questionnaires in addition to Stigmatizing Situations and Coping Responses inventories. These additional questionnaires addressed mental health symptoms, self-esteem, and body image. To evaluate mental health symptoms, the researchers used the Brief Symptom Inventory (BSI), a self-reported measure. Rosen and Myers (1999) used the Global Severity Index, an average severity of 53 symptoms experienced over the last week. To address body image, the researchers used the Body Shape Questionnaire (BSQ), a 34-item scale. Rosen and Myers used the Rosenberg Self-Esteem Scale (RSES), a 10-item questionnaire to evaluate levels of self-esteem.

For each of the 50 items pertaining to stigmatizing situations, the mean was 1.90 with a standard deviation of 2.0. This average represented the self-reported frequency of "several times in my life." For the coping responses, the mean was 2.83 with a standard deviation of 1.2 for

each of the 99 coping responses items. This average represents the self-reported frequency of "about once per year." Rosen and Myers (1999) discovered the most frequently reported stigmatizing situations were encountering physical barriers, unflattering assumptions made by others regarding the obese person, and comments from children that are hurtful. The participants reported these situations occurring between once a year and several times in my life. Other stigmatizing situations reported frequently were being stared at and being subjected to negative comments.

The participants reported the most frequently used coping mechanisms to be positive self-statements, attempting to socially disarm people who may be critical, and prayer, faith, and religion. The participants reported using these mechanisms between once a month and several times per year. To determine if stigmatization is experienced more frequently by men or women, the researchers analyzed results separately by gender. For men, the mean for stigmatizing situations was 2.05 (SD = 1.1). For women, the mean for stigmatizing situations was 1.86 (SD = 1.1). For coping mechanisms, the mean for men was 2.64 (SD = 1.1) and the mean for women was 2.89 (SD = 1.2). Neither of the differences were significant.

To assess internal consistency, Rosen and Myers (1999) calculated Cronbach's alphas for each measure and category. The overall alpha for stigmatizing situations and coping responses was .95, which indicated that both inventories were reliably consistent. By category, the alpha coefficients varied gently. Some categories showed lowered consistency; however, most were in the acceptable range. In testing validity, Rosen and Myers divided the sample into groups of BMI > 40 and BMI < 40. The division resulted in 110 subjects in the BMI > 40 (severely obese) and 36 subjects in the BMI < 40 (mild to moderately obese). The mean of the pretreatment BMIs for the severely obese group was 54.5 (SD = 10.6; range 40.4 to 80.9) and the mean of the pretreatment BMIs for the mild to moderately obese group was 34.2 (SD = 3.7; range 27.1 to 39.3), which were significantly different, (t = 16.97, df = 141, p < .0001). The groups differed in socioeconomic status and age, with the severely obese being in lower socioeconomic groups and younger, but did not differ on race, marital status, or gender.

The researchers used univariate analyses of covariance to control for age and socioeconomic status. The severely obese reported using significantly more coping mechanisms, F(1, 135) = 10.48, p < .005, and more stigmatizing situations, F(1, 135) = 20.47, p < .001. For

Stigmatizing Situations, item means were 2.16 (SD= 1.08) for the severely obese and 1.05 (SD = 0.83) for the mild to moderately obese. For coping responses, the item means were 2.99 (SD = 1.10) for the severely obese and 2.24 (SD = 0.91) for the mild to moderately obese.

To further test for validity, Rosen and Myers (1999) computed the correlation between pre-treatment BMI and Stigmatizing Situations, which was 0.40 ( $p < .001$ ) for all subjects, 0.44 ( $p < .001$ ) for the mild to moderately obese patient, and 0.14 for the severely obese patient, which was not significantly different. Therefore, the researchers concluded that as BMIs reached 40 and above, stigmatizing situations did not increase in direct proportion to body mass. Rosen and Myers also computed the correlation between pretreatment BMI and Coping Responses, which was  $r = 0.22$ ,  $p < .01$ . This indicated that the severely obese use more coping mechanisms as they are exposed to more stigmatizing situations. The researchers discovered that the correlation between stigmatizing situations and coping responses,  $r = 0.61$ ,  $p < .001$ , indicated that coping responses increase as stigmatizing situations increase.

The stigmatizing situations significantly correlated with the Brief Symptom Inventory, Body Shape Questionnaire, and the Rosenberg Self-Esteem Scale. More

negative body image, more negative self-esteem, and more mental health symptoms were apparent with a greater number of stigmatizing situations. Coping responses were also correlated with the Body Shape Questionnaire and the Brief Symptom Inventory, which indicated that more negative body image and more symptoms were associated with increased coping attempts. After controlling for frequency of stigmatizing situations and weight, no significance emerged with regard to coping responses and psychological adjustment measures. Rosen and Myers (1999) used partial correlations that controlled for weight and the frequency of stigmatization in order to develop three categories of "maladaptive" coping, which were associated with negative self-esteem, more mental health symptoms, and negative body image. The categories were "negative self-talk," "cry, isolate myself," and "avoid or leave situation." Bonferroni correction was used to control for significant correlations due to chance. The researchers discovered that "Avoid or leave situation" was significantly correlated with negative self-esteem and negative body image.

In the beginning, Rosen and Myers expected to find some forms of adaptive coping that would be related to better body image, fewer mental health symptoms, and higher levels of self-esteem. However, no categories met

these expectations. Four coping categories had significant partial correlations with the RSE, BSI, and BSQ, which were not statistically significant. These categories were "positive self-talk," "see situation as the other person's problem," "refuse to hide body, be visible," and "self-love, self-acceptance."

The study conducted by Rosen and Myers (1999) and the current study were similar in that the researchers used BMI to define overweight and obesity states. The studies differed in the Rosen and Myers included both clinical and nonclinical subjects, and the current researcher used nonclinical subjects only. The Rosen and Myers study examined men and women, and the current study examined women only. However, both study participants were seeking help for their problems associated with being overweight. Both the Rosen and Myers (1999) study and the current study used the Rosenberg Self-Esteem Scale to assess levels of self-esteem.

A review of the literature revealed seven studies on obesity related research relevant to the current research study. All of the research studies identified in the review of literature focused on the psychological aspects of being overweight as does the current research. The review of literature supported the need for further



research relevant to the psychological problems associated with being overweight.

## Chapter III

### The Method

The purpose of this study was to examine the relationship between levels of self-esteem and body weight in overweight women. The design, setting, population, and sample are discussed. In addition, instrumentation, data collection, and data analysis are identified in this chapter. The ultimate goal of this study was to obtain information that would allow for a better understanding of some of the problems associated with altered levels of self-esteem in relation to being overweight.

#### Design of the Study

The research utilized as a correlational design. Correlational research is defined as "an interrelationship or association between two variables, that is, a tendency for variation in one variable to be related to variation in another" (Polit & Hungler, 1999, p. 194). Therefore, a causal relationship between variables was implied in the study. Determining whether or not a relationship exists

between body weight and self-esteem in overweight women was the aim of the study.

### Variables

The variables of interest for this study were self-reported body weight and levels of self-esteem as measured by the Rosenberg Self-Esteem Scale. The dependent variable was body weight, and the independent variable was low self-esteem. Mediating variables may have included the participants' willingness to complete the questionnaire and the honesty or truthfulness of the participants.

### Setting, Population, and Sample

The setting for the study was a large metropolitan area in a rural southeastern state. The study took place in two urban support groups for overweight individuals. The population consisted of women over the age of 18 years who were involved in a selected support group for overweight individuals. The sample consisted of all prospective subjects chosen through convenience sampling who met the criteria and were willing to participate. The target sample size was 50 women.

### Data Collection Procedures

Before data collection, permission to conduct the research was obtained from the Mississippi University for Women Committee on Use of Human Subjects in

Experimentation (see Appendix A). Permission was obtained by a representative from each support group (see Appendix B). The representatives were informed about the study through an interview with the researcher and instructed to distribute the questionnaires. A letter of informed consent and an explanation of the study were given to the participants (see Appendix C). Once informed consent was obtained, the participants completed the Goodson Demographic Survey (see Appendix D) and the Rosenberg Self-Esteem Scale (see Appendix E).

Instrumentation. Two instruments were used to collect data for the study. The Goodson Demographic Survey was a 15-item researcher-designed tool used to assess characteristics of the sample. The survey was reviewed by a panel of expert researchers and deemed appropriate for use in this study. The survey consisted of both open-ended and multiple-choice questions. Subjects were asked about education level, gender, perception of weight, alcohol consumption, medications, and exercise in the Goodson Demographic Survey.

The Rosenberg Self-Esteem Scale, a 10-item survey, was used to evaluate levels of self-esteem. The instrument was established in 1965, and test-retest reliability was reported as .85. The items consisted of agree or disagree questions, with a high number of agree questions

indicating a high level of self-esteem and a high number of disagree indicating a low level of self-esteem. For items numbered 1, 3, 4, 7, and 10, the higher the score, the higher the level of self-esteem. For the remainder of the items, the higher the score, the lower the level of self-esteem. Each agree response was assigned a score of 2, and each disagree response was assigned a score of 1. This resulted in a range of scores of low to high (10 to 20).

After instructions were given by the researcher on administration of the questionnaires, a representative from each group distributed the surveys. The researcher was not present when the questionnaires were completed. Upon completion of the questionnaires, the participants were asked to place them in a sealed envelope that was provided and leave them with the representative. The representatives then contacted the researcher who collected the completed data.

### Data Analysis

Descriptive statistics including measures of central tendency were performed on the demographic data. Descriptive statistics are defined as statistics used to describe and synthesize data (Polit & Hungler, 1999). Content analysis was done with responses to open-ended

questions. Further data analysis was conducted using a Pearson  $r$  for correlational studies. The score from the Rosenberg Self-Esteem Scale was correlated with self-reported body weight, and  $t$  tests were utilized to determine additional data.

### Summary

This chapter has included the design for this study, in which the relationship between levels of self-esteem and body weight in overweight women was examined. The setting, population, sample, methods for data collection, and data analysis were also identified. In the following chapters, the findings of the study as well as the implication of the findings are revealed.

## Chapter IV

### The Findings

The purpose of this study was to examine the relationship between levels of self-esteem and body weight in overweight women. The design was a correlational design which implied a causal relationship between variables. In this chapter a description of the sample and analysis of the data in relation to self-esteem and body weight are presented. Additional findings are also included.

#### Description of the Sample

Convenience sampling was utilized to collect data from overweight women. The subjects were participants from urban support groups for overweight individuals in a large metropolitan area in a rural southeastern state. Of the 53 individuals who completed and returned the Goodson Demographic Survey and the Rosenberg Self-Esteem Scale, 51 were female and 2 were male. Of the 51 females, 8 of the individuals had a Body Mass Index (BMI) of  $< 25$ , and one questionnaire was incomplete which excluded 9 of the female individuals. The final sample consisted of 42

female subjects with weight ranging from 136 lb to 331 lb ( $\underline{M} = 194.93$ ,  $\underline{SD} = 43.24$ ) and height ranging from 5 ft to 5 ft 9 in ( $\underline{M} = 5$  ft 4.6 in,  $\underline{SD} = 0.22$  in). The BMI of the subjects ranged from 25.03 kg/cm<sup>2</sup> to 49.9 kg/cm<sup>2</sup> ( $\underline{M} = 32.48$  kg/cm<sup>2</sup>,  $\underline{SD} = 7.06$ ). The age of the subjects ranged from 21 years to 75 years ( $\underline{M} = 46.31$ ,  $\underline{SD} = 12.80$ ). The age distribution is presented in Table 1.

Table 1

Age Distribution of the Sample by Frequency and Percentage

Age (years)	$\underline{f}^a$	%
$\leq 35$	8	19.0
36 to 45	12	29.0
$\geq 46$	22	52.0

$^a \underline{N} = 42$ .

Other demographic data were collected on all of the subjects including ethnic distribution, perception of weight, education level, gender, type of insurance, smoking status, frequency of exercise, alcohol consumption, and chronic health problems. The time of onset of increased body weight was also assessed, and the subjects were divided into two groups, early-onset and



adult-onset. Findings regarding demographics presented above are depicted in Table 2.

Table 2

Demographic Characteristics of the Sample by Frequency and Percentage

Demographic characteristic	<u>f</u> <sup>a</sup>	% <sup>b</sup>
Race		
African American	3	7.0
Caucasian	39	93.0
Gender		
Female	42	100.0
Perception of weight		
Overweight	41	97.6
Just the right size	1	2.4
Education level		
College level	14	33.3
Below college level	28	66.6
Type of insurance		
Non-private	6	14.3
Private	36	85.7
How long overweight		
Early-onset	18	42.9
Adult-onset	24	57.1
Smoking		
Smoker	7	16.7
Nonsmoker	35	83.3
Alcohol consumption		
Never	9	57.1
Sometimes	33	42.9

(table continues)

Table 2 (continued)

Demographic characteristic	<u>f</u> <sup>a</sup>	% <sup>b</sup>
Exercise		
Little or none	25	59.5
Frequently	17	40.5
Medications <sup>c</sup>		
Hormone replacement	13	32.5
Birth control pills	2	5.0
Tranquilizers	1	2.5
Eating habits <sup>d</sup>		
I cook the meals	36	87.8
Someone else cooks the meals	3	7.3
Eat fast-foods	10	24.4
Eat TV dinners	5	12.2
Chronic health problems		
No chronic problems	23	54.8
High blood pressure	8	19.0
Diabetes	1	2.4
Low-back pain	9	21.4
Joint pain	12	28.6

<sup>a</sup>N = 42. <sup>b</sup>Percentages were rounded to the nearest tenth place. Not all participants answered all questions. <sup>c</sup>n = 41. <sup>d</sup>n = 41.

To further assess the relationship between demographic variables and BMI, a t test was conducted using the mean BMI for two groups. Only the results which emerged as significant are reported in Table 3.

Table 3

Mean Differences in BMI Related to Demographic Variables

Demographic variable	<u>M</u> <sup>a</sup>	<u>p</u>
Time of onset of increased body weight		
Adult-onset	29.96	.0060*
Early-onset	35.84	
Type of insurance		
Non-private	26.90	.0001*
Private	33.40	
Alcohol consumption		
Never	30.50	.0315*
Sometimes	35.10	
Exercise		
Little or none	30.50	.0928*
Frequent	33.90	

Note. N = 42.

<sup>a</sup>Mean body mass index.

\*p ≤ .10.

In Table 3, the differences in BMI between two groups as related to certain demographic variables are reflected. These findings revealed that the subjects with early onset of increased body weight had larger BMIs than those with adult onset of increased body weight. The findings further revealed that subjects with non-private insurance, such as

Medicare and Medicaid, were less overweight than those with private insurance. When assessing the variable of alcohol consumption, the study revealed the subjects who reported never drinking were less overweight than those who consumed alcohol. In terms of exercise, there was a significant difference between those who exercised frequently (more than 3 times per week) and those who did little or no exercise. The subjects who reported they exercised frequently were more overweight than those who reported little or no exercise.

#### Data Analysis Related to the Null Hypothesis

Data were analyzed to answer the following null hypothesis: There is no relationship between body weight and levels of self-esteem in overweight women. The Rosenberg Self-Esteem Scale (RSES) was used to determine overall self-esteem of the participants. The RSES was coded by positive and negative responses with positive responses representing positive self-esteem and negative responses representing negative self-esteem. The scores ranged from 2 to 10 with 10 being the highest level of self-esteem. The responses of the 10-item scale are depicted in Table 4.

Table 4

Description of Sample Responses on the Rosenberg Self-Esteem Scale in Relation to Self-Esteem by Frequency and Percentage

Question	Self-esteem	<u>f</u> <sup>a</sup>	%
1 - Satisfied with self	Negative	23	54.76
	Positive	19	45.24
2 - I am no good at all	Negative	14	33.33
	Positive	28	66.67
3 - I have good qualities	Positive	42	100.00
4 - Able to do things as well as other people	Negative	8	19.05
	Positive	34	80.95
5 - I don't have much to be proud of	Negative	5	11.90
	Positive	37	88.10
6 - I feel useless at times	Negative	19	45.24
	Positive	23	54.76
7 - Self-worth equal with others	Negative	5	11.90
	Positive	37	88.10
8 - Self-respect	Negative	25	59.52
	Positive	17	40.48
9 - I am a failure	Negative	2	4.76
	Positive	40	95.24
10- Positive attitude toward self	Negative	11	26.19
	Positive	31	73.81

<sup>a</sup>N = 42.

A Pearson r correlation was calculated between BMI and the RSES in which no significance emerged (p = .8190, p ≤ .10). Since no significance emerged, the researcher

accepted the null hypothesis. The findings are depicted in Table 5.

Table 5

Correlation Between BMI and the Rosenberg Self-Esteem Scale Using Pearson  $r$

Variable	$r$	$p^*$
RSES	-0.0364	.8190
BMI		

Note. RSES = Rosenberg Self-Esteem Scale. BMI = Body mass index.

\* $p = \leq .10$ .

Additional Findings

To further assess self-esteem as related to BMI, the sample was divided into two groups (positive and negative self-esteem), and a  $t$  test was utilized to compare the difference in the mean BMI with each item on the RSES. Of these comparisons, only one emerged as significant. For Question 9 of the RSES, which stated, "All in all, I am inclined to feel that I am a failure," the negative self-esteem group had larger BMIs than did the positive self-esteem group. Table 6 reflects these findings.

Table 6

Difference in Self-Esteem as Related to Mean BMI Utilizing a t Test

Question	Self-esteem	<u>M</u> <sup>a</sup>	<u>p</u> <sup>*</sup>
1 - Satisfied with self	Negative	33.2	.4658
	Positive	31.6	
2 - I am no good at all	Negative	31.0	.3125
	Positive	33.2	
4 - Able to do things as well as others	Negative	34.4	.5142
	Positive	32.0	
5 - I don't have much to be proud of	Negative	32.7	.4565
	Positive	30.6	
6 - I feel useless at times	Negative	32.5	.9431
	Positive	32.4	
7 - Self-worth equal with others	Negative	32.9	.8998
	Positive	32.4	
8 - Self-respect	Negative	33.4	.4735
	Positive	31.8	
9 - I am a failure	Negative	32.7	.1003*
	Positive	27.8	
10- Positive attitude toward self	Negative	32.6	.8177
	Positive	32.0	

Note. N = 42. df = 40.

<sup>a</sup>Mean BMI.

\*p ≤ .10.

To further assess self-esteem as related to demographic factors, a t test was utilized. The subjects were divided into two groups based on their responses on the Goodson Demographic Survey and then compared to their mean level of self-esteem. The findings of this test are depicted in Table 7. Only those findings of significance are reported.

Table 7

Comparison of Demographic Factors to the Rosenberg Self-Esteem Scale Utilizing a t Test

Demographic characteristic	<u>M</u> <sup>a</sup>	<u>p</u> <sup>*</sup>
Smoking history		
Smoker	6.0	.0492*
Nonsmoker	7.6	
Chronic health problems		
Absent	8.0	.0732
Present	6.78	

Note. N = 42. df = 40.

<sup>a</sup>Mean BMI.

\*p ≤ .10.

In evaluating the data, the subjects who reported to be smokers had lower self-esteem than those who did not smoke (p = .0492, p = ≤ .10). The analysis further



revealed that the subjects with chronic health problems experienced lower self-esteem than those who did not have chronic health problems ( $p = .0732$ ,  $p = \leq .10$ ).

To determine if age was a factor in self-esteem, the subjects were again divided into two groups (positive and negative self-esteem), and  $t$  tests were performed comparing responses to the RSES and mean age. The findings of significance are reported in Table 8.

Table 8

Comparison of Age and Self-Esteem as Reported on the Rosenberg Self-Esteem Scale Utilizing  $t$  Test

Question	Self-esteem	$\bar{M}^a$	$p^*$
1 - Satisfied with self	Negative	43.4	.0912*
	Positive	49.8	
2 - I am no good at all	Negative	41.6	.090*
	Positive	48.7	
7 - Self-worth equal with others	Negative	56.0	.0769*
	Positive	45.0	
8 - Self-respect	Negative	42.6	.0235*
	Positive	51.7	
9 - I am a failure	Negative	41.5	.0850*
	Positive	46.6	

Note.  $N = 42$ .  $df = 40$ .

<sup>a</sup>Mean age in years.

\* $p \leq .10$ .

In evaluating the data, for Question 1 of the RSES, "On the whole I am satisfied with myself," the younger subjects had more negative answers than the older subjects ( $\underline{M} = 43.4$ ,  $\underline{p} = .0912$ ,  $\underline{p} \leq .10$ ). For Question 2, "At times I think I am no good at all," the younger subjects reported negative self-esteem whereas the older subjects reported positive answers ( $\underline{M} = 41.57$ ,  $\underline{p} = .090$ ,  $\underline{p} \leq .10$ ). When assessing self worth, the older subjects reported more negative answers on Question 7, "I feel that I'm a person of worth, at least on an equal plane with others" ( $\underline{M} = 56.0$ ,  $\underline{p} = .0769$ ,  $\underline{p} < .10$ ).

When evaluating self-respect, the younger subjects reported wanting to have more respect for themselves than did the older subjects ( $\underline{M} = 42.6$ ,  $\underline{p} = .0235$ ,  $\underline{p} < .10$ ) for Question 8. For Question 9, "All in all, I am inclined to feel that I am a failure," the younger subjects reported more negative answers than did the older subjects indicating  $\underline{M} = 41.5$ ,  $\underline{p} = .0850$ ,  $\underline{p} < .10$ ). All of these findings suggested that the mean age for the subjects who reported negative self-esteem was younger than those who reported positive self-esteem with the exception of Question 7 which addressed self-worth.

The findings related to age further revealed that subjects with excess body weight at early onset were more overweight than those with adult onset. Subjects were

divided into two groups, adult onset and early onset. In order to further examine the two groups, descriptive statistics for BMI, age, and RSES were utilized. The results of these findings are depicted in Table 9.

Table 9

Demographic Variables Related to Time of Onset of Excess Body Weight

Variable	<u>M</u>	<u>SD</u>
Adult onset <sup>a</sup>		
BMI	28.40	5.73
Age	46.90	11.79
RSES	7.81	1.89
Early onset <sup>b</sup>		
BMI	35.26	7.81
Age	42.32	13.56
RSES	6.84	2.54

Note. BMI = body mass index. RSES = Rosenberg Self-Esteem Scale.

<sup>a</sup>n = 24. <sup>b</sup>n = 18.

These findings suggest that the subjects with onset of excess body weight at an early age had larger BMIs and lower self-esteem than those with onset of excess body weight as an adult.

The researcher conducted further analysis of data on the subjects who did not meet the criteria for the study related to the null hypothesis in an attempt to examine levels of self-esteem and body weight in general. Of the original 51 female subjects who completed the surveys, 8 had BMIs < 25, depicting normal body weight. The 8 individuals ranged in age from 27 to 53 years ( $\underline{M} = 39.125$ ,  $\underline{SD} = 9.72$ ) with BMI ranging from 20.67 to 24.82 ( $\underline{M} = 23.26$ ,  $\underline{SD} = 1.64$ ). In an attempt to determine if a relationship exists between women and levels of self-esteem in general, data were analyzed in relation to question 4 of the Demographic Survey. The question was as follows: Do you view yourself as overweight, underweight, too thin, or just the right size. Of the 8 normal weight individuals, 75% reported viewing themselves as overweight and 25% perceived themselves to be just the right size. When evaluating the self-esteem of the 8 normal weight individuals, the scores ranged from 5 to 10 ( $\underline{M} = 8.00$ ,  $\underline{SD} = 2.00$ ), indicating positive self-esteem as a group. Pearson's correlations were performed to examine the relationship between body weight and self-esteem in which no significance emerged,  $\underline{r} = 0.40115$ ,  $\underline{p} = .3246$ ,  $\underline{p} < .10$ ).

In this chapter, the results of the data analysis for demographics, self-esteem, and body weight have been presented. Although the researcher failed to reject the

null hypothesis, several additional findings emerged from the data. Results of the data will be discussed in detail in Chapter V, The Outcomes.

## Chapter V

### The Outcomes

The purpose of this study was to determine whether a relationship existed between body weight and levels of self-esteem in overweight women. Pender's (1996) Health Promotion Model was used to guide this descriptive correlational study. This chapter includes a discussion and interpretations in relation to the null hypothesis. Additional findings, implications, conclusions, and recommendations that emerged are also included.

The null hypothesis for this study was as follows: There is no relationship between levels of self-esteem and body weight in overweight women. The sample consisted of 42 women who were from a large metropolitan area in a rural southeastern state and who were involved in selected urban support groups for overweight individuals. The subjects had calculated BMIs of  $> 25$  based on self-reported height and weight. Demographic data were collected using the Goodson Demographic Survey and were analyzed using descriptive statistics. To ascertain the subject's self-esteem, the Rosenberg Self-Esteem Scale was

used. Pearson product-moment correlations were utilized to analyze the data. Data were further analyzed using t tests.

### Summary of Findings

The sample consisted of 42 female subjects with a mean weight of 194.93 lbs and a mean height of 64.6 in. The mean BMI of the sample was 32.48 kg/cm<sup>2</sup>. Of the 42 subjects, the mean age was 46.31 years. Participants were primarily Caucasian (93%) with African Americans representing the remainder of the sample (7%). The majority of the sample reported below college education level (66.6%) with the remainder of the sample reporting a college-level education (33.3%). Data were analyzed to depict a relationship between body weight and levels of self-esteem in overweight women. No correlation emerged between BMI and the RSES in the current study. Therefore, the researcher failed to reject the null hypothesis. Explanations for this finding could be related to a number of factors. In the Foster, Sarwer, and Wadden (1998) study, the researchers examined the severity, specificity, and clinical significance of body image dissatisfaction among obese women. Foster et al. (1998) concluded that obese women with decreased levels of self-esteem and increased depressive symptoms had increased levels of body

dissatisfaction. However, as congruent with the current research, Foster et al. (1998) failed to report a significant relationship between BMI and body dissatisfaction suggesting that the severity of body image dissatisfaction may be influenced by factors other than weight.

The small sample size in the current study could be an important factor in the findings due to low statistical power. In larger samples, there is more diversity and the statistics are more powerful. Hill and Williams (1998) conducted a study to examine psychological health in a nonclinical sample of obese women. The sample consisted of 179 women who were divided into three groups based on BMI. The researchers discovered a positive relationship between BMI and self-esteem in all three groups, with the larger BMI group having the lowest self-esteem.

The sample for this study consisted of women who were already involved in a support group and seeking help for their weight problem. Perhaps the women had experienced some reduction in weight and therefore experienced a positive change in self-esteem. In the Foster, Wadden, and Vogt (1997) study that examined body images of obese women before, during, and after weight loss, the researchers discovered that weight loss treatment was significantly related to improvement in the ratings of body satisfaction



and appearance. The researchers further concluded that the improvements in body satisfaction were not a result of the weight loss but of the treatment program.

Another possible explanation was that the dichotomous response choices for the RSES were too broad. For the 10-question survey, only two responses were given as possible answers, that of agree and disagree. A wider range of self-esteem may have emerged if the responses had been more sensitive. In a study conducted by Hill and Williams (1998), the Rosenberg Self-Esteem Scale was used to assess general self-worth and global self-esteem as did the current research. However, the Hill and Williams (1998) study used a 4-point response questionnaire with choices of strongly agree, agree, disagree, and strongly disagree. When using this response system, Hill and Williams determined that the larger BMI group had lower self-esteem and experienced greater body dissatisfaction. Likewise, the current study revealed that subjects who reported negative self-esteem had larger BMIs than those subjects with positive self-esteem.

In further assessment of BMI as related to the demographic variables of the current study, statistically significant findings emerged. The sample was divided into two groups (adult onset and early onset) based on onset of excess body weight. The subjects who reported increased

body weight at early onset had larger BMIs than the subjects at adult onset. The subjects who reported onset of excess body weight at an early age also experienced lower levels of self-esteem. In a study conducted by Grilo, Brownell, Rodin, and Wilfley (1994), the researchers examined teasing history, body image, and self-esteem among obese women. The sample was divided into two groups (early onset obesity and adult onset obesity). The subjects with early onset obesity were found to have greater body dissatisfaction and lower self-esteem than those with adult onset obesity. Therefore, the findings of the study conducted by Grilo et al. were congruent with the current research in that the subjects with early onset obesity were heavier than the subjects with adult onset obesity.

The subjects in the current study who reported frequent exercise (more than 3 times per week) were found to have larger BMIs than those who reported little or no exercise. Perhaps an explanation for this finding is that the women were involved in a support group and were aware of the necessary actions for weight loss. The larger BMI may have motivated the larger women to exercise more frequently. Another possible explanation for this finding is that the subjects who reported exercising more frequently may have accumulated more muscle mass which in

turn leads to larger BMI. However, exercise is very subjective in that everyone has their own definition of exercise which makes this a difficult area to address. The current researcher found that the subjects who reported no alcohol use had a lower BMI than did the subjects who reported alcohol use sometimes. A possible explanation of this finding could be due to the increased caloric content of the alcohol that is consumed. Again, this is a very subjective factor to examine. The researcher also examined the risk factor of smoking and found that the subjects who reported being smokers had lower levels of self-esteem than those subjects who did not smoke.

The Goodson Demographic Survey contained a question to examine chronic diseases and or health conditions that the subjects had in order to further assess health risks of excess weight. The choices were as follows: (a) no chronic disease, (b) high blood pressure, (c) diabetes, (d) low-back pain, and (e) joint pain. The researcher purposed to determine health problems that were related to excess body weight. Of the 42 women, 23 reported no chronic disease. When assessing high blood pressure, 3 of the subjects reported having high blood pressure alone and 2 reported having high blood pressure along with joint pain. One subject reported having high blood pressure, diabetes, low-back pain, and joint pain, and 2 reported

having high blood pressure, low back pain, and joint pain. Four of the subjects reported having low back pain alone, whereas 2 reported both low-back pain and joint pain. When examining joint pain alone, 5 of the subjects reported positive findings.

The researcher determined 38% of the sample reported some type of joint or low-back pain as a chronic problem which may have been related to excess body weight. A study conducted by St. Jeor (1993) listed several health problems that overweight women are at risk of having. Among these health problems were diabetes, high blood pressure, and osteoarthritis. The St. Jeor study also stated that mortality and morbidity from diabetes were increased with obese women. St. Jeor further found that diabetes in obese women occurred three times more frequently than in nonobese women. The findings from the current study indicated that 45.24% of the sample revealed chronic health problems which were congruent with the findings of St. Jeor. Additionally, 48% of the women in the current study were 45 years of age or younger which is a young age to have so many health problems. These findings suggest that this group of overweight women may develop significantly more chronic health problems as they age. Further research is needed to better determine the actual risk of excess body weight in relation to health

problems and age of onset of health problems in overweight women.

In assessing self-esteem, the subjects were divided into two groups for comparison (positive and negative self-esteem). For all questions on the RSES, the subjects with negative self-esteem had larger BMIs than those who answered positively with the exception of Question 2 which stated, "At times I think I am no good at all." For this question, the subjects who reported positive self-esteem had larger BMI than the subjects with negative self-esteem. These findings suggest that even though the larger women have more negative self-esteem they have some degree of self-worth. When comparing age to self-esteem, the younger subjects had overall lower self-esteem than the older subjects with the exception of Question 7 which stated, "I feel that I am a person of worth on an equal plane with others." For this question, the older subjects reported lower self-esteem than the younger subjects. An explanation of this finding could be related to older subjects not having an active career or not feeling as successful as some of the younger subjects. Additionally, the older women may have felt they had not accomplished what they would have envisioned at their age, while the younger women were more optimistic about their

accomplishments at their younger age which contributed to their feelings of self-worth.

The researcher was interested in assessing the perception of weight among the 8 women who completed the questionnaires and had BMIs of  $< 25$ , depicting normal body weight. This group consisted of women with a mean age of 39.12 years and mean BMI of 23.26 kg/cm<sup>2</sup>. Of these 8 women with normal body weight, 75% perceived themselves as overweight. In Foster et al. (1998), the researchers examined both obese and nonobese women. The nonobese sample had a mean BMI of 23.78 and mean age of 45.14 years. The researchers discovered positive correlations between body image dissatisfaction and self-esteem, in that increased body image dissatisfaction was related to lower levels of self-esteem. This finding was congruent with the obese subjects as well. Although the current research reveals perceptions of excess body weight in normal weight women, it failed to suggest low self-esteem, as the women had a mean self-esteem score of 8 on a scale of 2 to 10. In comparison to the current research, the Foster et al. (1998) study included 43 nonobese subjects which yields more powerful statistics.

Pender's (1996) Health Promotion Model, which served as the theoretical framework to guide this study, supported the responses of the participants. This model

identifies cognitive perceptual factors and modifying factors that influence health-promoting behavior among individuals. The researcher expected that altered levels of self-esteem may serve as barriers to health-promoting behavior. The participants in this study were seeking treatment and help with their problems in an effort to change their behavior. Areas such as age, sex, ethnicity, weight, situational factors, and behavioral factors were assessed among the participants. The findings suggest that certain factors such as smoking history, alcohol use, exercise routine, and the presence of chronic health problems possibly serve as barriers to health-promoting behavior as well as motivating factors to elicit a change in behavior. This lends credence to the use of the Health Promotion Model to guide this research.

### Limitations

The design of the study imposed certain limitations encountered in the course of conducting the research limiting the generalization of the findings. The study was conducted using convenience sampling which may not adequately represent the overweight population. In addition to the sampling plan, the sample size was small and consisted of women actively involved in a support group for overweight individuals. This sample only

included overweight women, therefore, limiting generalization.

The tool used to assess global self-esteem was limited in response choices and, therefore, not sensitive enough. Because of the sensitive nature of some of the questions, the responses may not have been truthful. The participants in this study had sought treatment which could possibly have affected their self-esteem. Furthermore, the Demographic Survey contained subjective inquiries, such as alcohol use, smoking history, and exercise patterns, which needed more sensitive response options. One of the support group participants voiced concern with answering such personal questions.

### Conclusions

Based on the results of the study, the following conclusions were made:

1. The self-esteem of the subjects in this research study was relatively high.
2. There was no relationship between increased body weight and levels of self-esteem among the study participants.
3. The subjects with risk factors, such as smoking and alcohol use, had a larger BMI than those without the risk factors.



4. The subjects with early onset of excess body weight had lower self-esteem and larger BMIs than those with adult onset.

#### Implications for Nursing

A number of implications for nursing emerged from this study. Implications for nursing theory, research, practice, and education are described in this section.

Nursing theory. Nursing theory is tested through research. Pender's (1996) Health Promotion Model was used in this research which supports the findings of this research and future research regarding health problems and health-promoting behavior. Self-esteem has been shown to serve as an important factor in psychological health. Altered levels of self-esteem and altered perception of health and control of health serve as barriers to health-promoting behaviors. This theory is a solid framework for research related to health and all factors related to health.

Nursing research. The lack of nursing research related to the specific relationship between body weight and levels of self-esteem in overweight women supports the need for further research on this topic. Studies indicate the relationship between body image dissatisfaction and low self-esteem among all women. Further research needs to

be conducted regarding body weight and its relationship to body image dissatisfaction and self-esteem. Previous research has indicated that self-esteem is a highly significant negative predictor of poor mental health (Hill & Williams, 1998). Research needs to be continued in order to provide adequate health care to all individuals with focus on health promotion and primary prevention.

Nursing practice. In order to promote health and positive self-esteem, the nurse practitioner must be knowledgeable about excess body weight and the health problems associated with being overweight. With an understanding of the problems and issues that the overweight woman faces, which was the focus of this study, the nurse practitioner might be able to provide more holistic nursing care. The nurse practitioner's knowledge and expertise can be incorporated into all of the roles used by the nurse practitioner. The nurse practitioner has the responsibility to educate the individuals they serve about health promotion and prevention, such as weight loss, in order to improve self-esteem and body image.

Nursing education. Nurse practitioner students should be educated about the problems and issues that overweight individuals face. Curricula should include both physical and psychological problems, such as altered levels of self-esteem. Curricula should include assessment

techniques to identify altered levels of self-esteem as a possible determining factor in other illnesses. Nurse practitioner students should further be taught methods to boost self-esteem in the individuals they serve.

### Recommendations

Based on the findings of the study, the following recommendations were made:

#### Practice

1. Performance of routine assessments of levels of self-esteem among overweight individuals.
2. Conduction of routine assessment of the barriers to health-promoting behavior among individuals.
3. Instruction and education of overweight individuals and families regarding the problems and issues that overweight individuals face.

#### Research

1. Replication of the study with a more sensitive tool to address self-esteem specific to the overweight individual.
2. Replication of the study with a larger sample and a more culturally diverse group.
3. Replication of this study to include a qualitative component in order to examine more personal feelings and attitudes of the overweight individual.

4. Replication of the study to include overweight individuals who are not seeking help or treatment in a support group.

5. Investigation of perceptions of normal weight women concerning body image and self-esteem.

6. Investigation of the relationship between self-esteem and body image dissatisfaction.

#### Education

1. Incorporation of instruction of students entering the health care field related to overweight women and problems such as self-esteem.

2. Incorporation of self-esteem and its relationship to health problems of overweight individuals in continuing education for primary care providers.

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APPENDIX A

APPROVAL OF COMMITTEE ON USE OF HUMAN  
SUBJECTS IN EXPERIMENTATION OF  
MISSISSIPPI UNIVERSITY FOR WOMEN





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March 30, 2001

Ms. Kristi H. Goodson  
P. O. Box W-910  
Campus

Dear Ms. Goodson:

I am pleased to inform you that the members of the Committee on Human Subjects in Experimentation have approved your proposed research as submitted with the recommendation that the group be limited to those eighteen years old and older. The following statement must be added to your consent form: *Failure to participate shall not affect the status of the participant*. The Committee requires that the results of any questionnaire or survey be kept under lock and key to ensure confidentiality and that they be kept for a sufficient length of time to protect both participant and researcher.

I wish you much success in your research.

Sincerely,

Vagn K. Hansen, Ph.D.  
Vice President  
for Academic Affairs

VH:wr

cc: Mr. Jim Davidson  
Dr. Lynn Chilton  
Graduate Nursing Program

APPENDIX B  
LETTERS REQUESTING PERMISSION  
TO USE TOOLS

112 Hillcrest Drive  
Clinton, MS 39056

April 10, 2001

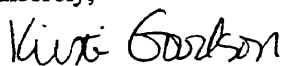
Donna Rouse  
Weight Watchers  
440 Cedars of Lebanon  
Jackson, MS 39206

Dear Mrs. Rouse,

I am writing you to request your permission to use the Weight Watchers group for my data collection. I am researching the relationship between levels of self-esteem and body weight in overweight women. Because of my knowledge and experience with Weight Watchers, I would like to use your facility as my data collection site. The criteria for participants is a Body Mass Index of 25 or greater based on self-reported height and weight.

The participant will be given letter of information and informed consent. Permission of the participant will be obtained by completion of the questionnaires. I will not be present to collect the data. I will provide you with envelopes that contain information and questionnaires to distribute to the participants. The participants are free to withdraw from the study at any time prior to data analysis. A copy of the letter of information and informed consent is enclosed.

Sincerely,

  
Kristi H. Goodson, RN

  
\_\_\_\_\_  
Signature of Agency Representative

112 Hillcrest Drive  
Clinton, MS 39066

April 10, 2001


Judith Lowery  
Overeaters Anonymous  
202 Salem Square  
Ridgeland, MS 39157

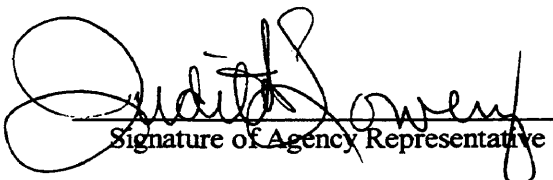
Dear Mrs. Lowery,

I am writing you to request your permission to use the Overeaters Anonymous group for my data collection. I am researching the relationship between levels of self-esteem and body weight in overweight women. Because of my knowledge of Overeaters Anonymous, I would like to use your facility as my data collection site. The criteria for participants is a Body Mass Index of 25 or greater based on self-reported height and weight.

The participant will be given a letter of information and informed consent. Permission of the participant will be obtained by completion of the questionnaires. I will not be present to collect the data. I will provide you with envelopes that contain information and questionnaires to distribute to the participants. The participants are free to withdraw from the study at any time prior to data analysis. A copy of the letter of information and informed consent is enclosed.

Sincerely,

  
Kristi H. Goodson, RN

  
Signature of Agency Representative

APPENDIX C

LETTER OF INTRODUCTION AND  
INFORMED CONSENT

Letter of Introduction and  
Informed Consent

Dear Study Participant,

My name is Kristi Goodson, a registered nurse working on a master's degree at Mississippi University for Women. I am conducting a study to examine the relationship between the levels of self-esteem and body weight in overweight women as a part of my graduate thesis requirement. The findings of my research will help healthcare professionals to better understand some of the problems that overweight women are faced with. I will provide two questionnaires that will take about 10 to 15 minutes to complete.

By completing the questionnaires you are agreeing to participate in my study. Please understand that your participation is voluntary and all results will be kept confidential as my results will only be reported on a group basis. I do not need your name and will not know which results are yours. You may withdraw from the study at any time. Failure to participate will not affect the status of the participant.

If you feel you need more information before agreeing to become a participant, feel free to contact me at (601) 924-8403 or via E-mail at KHRN@aol.com.

Thank you for your consideration.

Sincerely,

Kristi Goodson, RN, FNP Student  
Mississippi University for Women

APPENDIX D  
GOODSON DEMOGRAPHIC SURVEY

## Goodson Demographic Survey

## FILL IN THE BLANK:

1. Your current weight is \_\_\_\_\_.
2. Your height is \_\_\_\_\_.
3. Your age is \_\_\_\_\_.

## CHECK (✓) ALL THAT APPLY:

4. Do you view yourself as
  - ☐ a. overweight
  - ☐ b. underweight
  - ☐ c. too thin
  - ☐ d. Just the right size
5. Your sex is
  - ☐ a. Male
  - ☐ b. Female
6. Your highest level of education is
  - ☐ a. elementary
  - ☐ b. high school diploma
  - ☐ c. attended college
  - ☐ d. college degree
7. What type of insurance do you have?
  - ☐ a. Medicare
  - ☐ b. Medicaid
  - ☐ c. private insurance
  - ☐ d. no form of insurance
8. How long have you been overweight?
  - ☐ a. All of my life
  - ☐ b. Since the last 5 years
  - ☐ c. Since the birth of children
  - ☐ d. Since my 20s
  - ☐ e. Since my 30s
  - ☐ f. Since my 40s
  - ☐ g. Since my 50s



9. Do you smoke?
- ☐ a. Yes
  - ☐ b. No
10. How often do you drink alcoholic beverages?
- ☐ a. Never
  - ☐ b. Occasionally
  - ☐ c. Weekly
  - ☐ d. Daily
11. Do you take any of the following medications?
- ☐ a. Hormone replacements
  - ☐ b. Birth control pills
  - ☐ c. Diet medication
  - ☐ d. Birth control shots
  - ☐ e. Tranquilizers
12. How often do you exercise?
- ☐ a. Never
  - ☐ b. Once per week
  - ☐ c. Twice per week
  - ☐ d. Three times per week
  - ☐ e. Four to five times per week
13. What are your eating habits?
- ☐ a. I cook the meals.
  - ☐ b. Someone else cooks the meals.
  - ☐ c. Eat fast foods
  - ☐ d. Eat TV dinners
14. What is your race?
- ☐ a. Caucasian
  - ☐ b. African American
  - ☐ c. American Indian
  - ☐ d. Hispanic
  - ☐ e. Asian/Other
15. Do you have any of the following chronic health problems?
- ☐ a. High blood pressure
  - ☐ b. Diabetes
  - ☐ c. Low-back pain
  - ☐ d. Joint pain

APPENDIX E  
ROSENBERG SELF-ESTEEM SCALE

## Rosenberg Self-Esteem Scale

1. On the whole, I am satisfied with myself.  
☐ a. Agree ☐ b. Disagree
2. At times I think I am no good at all.  
☐ a. Agree ☐ b. Disagree
3. I feel that I have a number of good qualities.  
☐ a. Agree ☐ b. Disagree
4. I am able to do things as well as most other people.  
☐ a. Agree ☐ b. Disagree
5. I feel I do not have much to be proud of.  
☐ a. Agree ☐ b. Disagree
6. I certainly feel useless at times.  
☐ a. Agree ☐ b. Disagree
7. I feel that I'm a person of worth, at least on an equal plane with others.  
☐ a. Agree ☐ b. Disagree
8. I wish I could have more respect for myself.  
☐ a. Agree ☐ b. Disagree
9. All in all, I am inclined to feel that I am a failure.  
☐ a. Agree ☐ b. Disagree
10. I take a positive attitude toward myself.  
☐ a. Agree ☐ b. Disagree